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FDI versus local industrial investment: a human capital perspective of development

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FDI

VERSUS

LOCAL INDUSTRIAL INVESTMENT:

A HUMAN CAPITAL PERSPECTIVE OF DEVELOPMENT

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"This song was written from the perspective of hope,

and hope at the end of the day connects us all,

no matter how different we are"

Marketa Irglova, musician, after winning

an Academy Award for the song:

'Falling Slowly' from the movie 'Once'"

(InTime.com/quotes)

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ABSTRACT

This research looks at three automotive components' factories in Egypt, equally benchmarked in all aspects, except for the nationality and nature of their ownership structure and their unique management arrangements and styles. One is totally foreign owned, but co-managed, the second is partly foreign owned, and managed, and the third is totally Egyptian-owned and managed. The study eventually, seeks to uncover the inner workings of the role of FDI vis-à-vis that of local industrial intellectual elite (progressive entrepreneurs), in conjunction with the pattern of intermittent reliance on foreign technical assistance. It probes the different ways these three different arrangement settings differ or converge in their agency for human capital accumulation, in the form of technical cultural and social expertise, while levering aspects of leadership and empowerment.

"Way- back" appointed employee samples, in each factory, are tested against their most recently appointed counterparts, for their level of accumulated technical, social and cultural expertise. The research incorporates a varied mix of tools of statistical analysis, where 'a single case study with multiple embedded units study' approach, including , theoretical and political-economic contextualization, all combine, in order to give a clearer picture of the situation of industrial modernity versus overall modernity against a contemporary discourse of global modernity.

Chapter 1

INTRODUCTION

'Enlightenment', 'Development', 'Growth', 'Progress', 'Advancement', and 'Sustained Development': are all terms-or concepts that, have always, and continue to instigate- for both, experts and students of contemporary social sciences- more or less one meaning, 'Positive and Favorable Change'. People of interest in the modern social sciences; especially those in the fields of Economics, Management and Political Science, are definitely familiar with such different multitude of perspectives that have been formulated, all-along, since the notion of 'Modernization' came into being. The different terms offered different and various analyses of diverse specific dimensions of 'Development'. Simply put, these perspectives were and still are considered invaluable tools and aids for countries that are seeking the only way out of the poverty or out of the idleness trap; the only way out towards a better improved and sustainable future for all.

These perspectives range, from the old to the new, the traditional to the modern and from the outmoded to the most up-to date. Some of them, stemming from 'Marxism' and 'neo-Marxism', such as those pertaining to 'the dependency school' and the concept

of 'de-linking' (end of the sixties), 'modes of production' or 'world systems theories' (early and mid seventies)- which in addition to 'liberalism', culminated into 'neo-liberalism'- were all noted by Shuurman. The "post-impasse" perspectives ranged from perspectives offered by the regulation school, the actor-oriented approach, post imperialist thinking, gender studies and eventually sustainable development and post modernist thinking. Consecutively, "New Growth theories" started dominating the development scene: We hear a lot of civil society, knowledge era, social capital, institutions, state theories, and social psychological or cultural approaches to development, etc.

Globalization, Industrial Development and Poverty

Eight years ago, the Arab Human Development Report 2002 aimed at exposing the gaps and describing the main obstacles in the way of development in the region. It proposed proper strategies to overcome each obstacle and to narrow the gaps. As the report authors witnessed the stagnating economic growth in developing countries, they tagged unemployment as a tragic symptom of the faltering economy as well as a central hindrance to progress. One of the main impediments as indicated by the report was the role of Arab state governments in promoting and regulating markets; one that has been "both constrained and constraining", a fact that resulted in a hesitant private sector contribution. Thus a central ingredient would be the government's responsibility to create and maintain a better environment in which the private sector could exist and flourish. This would form a nexus for development; a clear political commitment to full employment, which is a must, if we are to secure economic participation of all. This could then be attained by considering projects that

are employment generating by nature, along with the application of a "deliberate, informed strategy" to create skill-intensive, high productivity jobs. By so doing, the report shows how the government role is actually changing from a previous regulator of labor laws and labor market to the role of a facilitator guide and a smoothing agent of ruthless free market forces, which are nonetheless a necessity for promoting economic participation.

Authors of the report confirmed, the fact that Arab states had a greater role, that is one of leadership and example which helps influence traditional values and culture. These values are instrumental to reaching development goals. They asserted as well, that upon governments, fall the responsibility to manage and direct a broader democratic dialogue between cultural traditionalism and global modernity.

A Role for the State

Along the same lines, while the role of the state was erroneously discarded from the development outlook, as it was intentionally dismissed by the structuralists, functionalists and behaviorists, it was they, themselves who brought it back into the picture for many reasons; especially after the big surprise of the rapid, steady, fervent and unprecedented development rates of east-Asian countries. Renewed interest in the "state" was declared in many instances and published in many writings by development specialists and scholars (World Bank Development Report, 97 and Nordlinger). Instead of demands for the total retreat of the state, the new perspective called for it to match its intervention with its capacities. It came to recognition that a certain type of state is required to aid and to prompt the process of development. An effective state is an imperative that efficiently and smoothly effects overall improvements in society,

especially in ensuring and maintaining the sustainability element of development objectives. The state is no more viewed as the provider of development, rather a facilitator, mediator, a trustworthy regulating partner or an effective catalyst. Now more than ever, industrial development is by no means considered a luxurious trajectory, or a fun ride, rather a vital, persistent, and serious necessity for development.

Technocracy and Local Entrepreneurship

Egypt's ruling elite, including a sizable number of technocratic experts, must rely on their technical background to find optimal solutions for the best investment decisions and capital allocation issues. Emphasis should be on practical solutions: policy formulations translated into practical action plans, with a respectable threshold for social implications. A good strategy would also be directed towards attracting foreign capital in any form. The state should be able to channel it to development purposes and to maintain its direction towards its long term growth goals. Emphasis is on greater interests for basic and higher education, research and development, science and technology consumption as well as through encouraging the local intellectual and entrepreneurial caliber to take the lead through investing in optimum industrial endeavors. Achieving economic growth through industrial development will not only advance living standards, but will also increase the people's ability to withstand the other painful measures and policies of development. It will definitely have a positive impact both on the local constituency, gaining a sense of ownership of the development project, as well as on the international actors to be encouraged to participate in a fruitful venture to make it more prosperous. It is thus quite a challenge to build on the initial "nascent recovery" to move

ahead (Carkoglu, Eder and Kamal, 33-34). This awareness may be prompted by the new trend of globalization and the pressures to integrate and conform.

Despite the current gloomy look of the future, the new serious efforts exerted by the Egyptian state in many fields, which were, previously, overlooked, such as the cultural, educational and industrial grounds seem to provide light at the end of the tunnel. However, as difficult as it may appear to be, while Egyptians are seemingly in the process of facing up to their limitations as well as coming across their own potentials, prospects for development are not imperceptible.

A Broader Perspective

In Henry and Springborg's opinion, sustainable human development is not only the solution to unemployment, which forms the core problem in the region, but it represents as well, a pivotal fend off to Arab youths' feelings of alienation and frustration (Henry, 2003, and Henry and Springborg, 2001). This fact perfectly coincides with AHDR 2002 resolve that the focus should be on people first, because human development promotes economic growth and not vice versa. If we develop humans we start a virtuous cycle that is the hope of every Arab living inside or outside the Arab world. However, Henry cautions that prudence here is a sought out virtue and that using industrial modernization and export development strategies as engines of growth should follow a thorough study of each country's unique comparative advantage. That would in her opinion, naturally, constitute the finest and most efficient way for industrial competence and thence economic achievement.

Research Fundamentals

That is exactly where the research makes a requisite landing to assail several sensitive veins in one strike. First, it probes the potency of FDI, concerning human capital development in adult, after school years. Second, it gropes the human development effects of globalization, through physical FDI as opposed to its financial form. Third, it weighs up the value of local private business ventures as opposed to foreign ventures, in effecting human development, through personal development. Eventually, while traveling the course, it taps upon industrial psychology, human capital formation and leadership theories as means of analysis of differences, either detected or undetected. Hence a multitude of researches in the fields of FDI effects on different host countries is reviewed. Literature about Globalization effects on developing countries comes in handy, as well as, literature about human capital formation and its relationship to management styles. Spillover effects of TNCs on developing countries are significant, as well as critical reviews of Inkeles' 'Modernity Syndrome'. Moreover, literature about developing countries' lag in economic development and its relationship with R&D, innovation and manufacturing strategies, is scrutinized.

Weighing effects on human capital formation and hence on human development in Foreign firms against those in local investment ones, could help determine future manufacturing and investment strategies in Egypt which could be extrapolated to other developing countries with comparable conditions, in the automotive, as well as to other industrial sectors. Those strategies could then be more in-tuned and selective with regards to providing concessions to FDI or favoring it over local private investment. In

plain words: Should governments provide more incentives to local industrial ventures over physical FDI or not?

Research Hypothesis

The thesis aims to investigate the differential in human development/human capital accumulation of blue collar workers who have been working for more than three years, in three automotive factories in Cairo, which differ in their ownership structure/nationality and/or in their leadership styles. Its objective is to find out whether, how and to what extent, the amount of personal development, human capital accumulation (represented by technical, social, and cultural human capital stocks) gained from being exposed to the factory experience, differ according to differences in the nationality of ownership and/or in leadership styles. The main hypothesis thus would be that the extent of workers' capital accumulation (technical, cultural and social) in benchmarked local private automotive factories owned by enlightened national entrepreneurs is not that much less than that accumulated in their foreign owned counterparts in the same field.

The sample comprises three factories; one is totally foreign owned and co-managed, the second is partly foreign owned, and co-managed, and the third is totally Egyptian owned and managed. The three factories are benchmarked, size- wise and objective wise, for the bare aim to control other variables that could distort or blur results. The research at hand takes off from the famous old works by Inkeles and Davis with regards to a social psychological approach to development devised in the 1960s, questionnaires, case studies

of each factory and deep analysis, the research sets off from the old and famous social psychological approach to development. Inkeles and Smith's long standing and proven theory puts the 'industrial organization' in second place after the school, especially for those who missed out on schooling altogether, or even those who did not get past the primary level. The aim of the research is not to reconfirm this result, it is rather to find out about the differences between the 'development' (if one might term it for simplicity's sake), of blue collar workers in organizations that differ in their nature according to their ownership structures, whether foreign or local and/or in leadership styles thereof.

Research results, by reviving attention to human capital formation in adults, and especially in formal institutions such as factories, would draw the interest of business elites to the importance of such undertakings and encourage them to undertake more ventures, with a wider eye opener such as social corporate responsibility. They would, moreover, direct the international development community to the importance of coaxing financial business communities in developed countries such as TNCs to get tangibly involved [in the form of physical FDI] , rather than relying mainly on foreign portfolio investment, in developing countries. While such physical FDI could be branded as 'hands on development', it would outperform the regular traditional thwarted project approach, in effecting development. In a similar vein, more weighted support, meaning financial, technical, as well as market support networking would be accorded to indigenous entrepreneurs.

Chapter 2

LITERATURE REVIEW

Occupation and Individual change across the World:

(Inkeles and Smith)

The Book that sparked interest in the research topic is: 'Becoming Modern' written by Alex Inkeles and David Horton Smith, in 1974, and based on the extensive study carried out by Inkeles et al., in 1966, on the causes and consequences of men's- especially factory workers'- behavioral and attitudinal change in six different developing countries. Their developed Overall Modernity scale was an ingenious measure that reflected with a significant and evident reliability, the dimensions of individual change they hoped to investigate. Qualities such as openness to new experience, attitudes towards women, perceptions about religion and life, value of time, respect for the elderly, readiness for change, worth of information, significance of planning for one's own future, sense of efficacy, ambitions for life, value of technical skills and respect for the other, were all among a long list of themes upon which they tested their hypothesis. They proved that the generators of change produced an even and a universal version of a

modern man, which in their view meant something like a civilized individual. In their own words: "the modern man is a cross-national, transcultural type who can be identified by our scales whatever the distinctive attitudes with which his culture may otherwise have endowed him" (p. 118).

Human Capital

Literature on Human capital forms the nexus of the theoretical framework of the research, while it represents the principal component being measured against different settings of industrial organizations. Human capital is all what the research is concerned about. Being a major component of human development, and at the same time a determinant of, and an accidental result of global industrial interaction, it is a formidable chance to have the opportunity to base the study around it. Leach has it well put in his article "Competent Communities", when he stresses that: "Using people to get the work done is probably a wrongheaded model for transformational leadership; instead we should use the work to improve the formation of people" (p. 22)

Theodore Schultz in his book, "Investment in Human Capital", 1971, talks about an abandoned account of human capital, despite the fact that it has been established as a principal ingredient , though hidden, of differentials of returns on capital investment. Along the same lines, Svennilson wrote, in that same year, about the relationship between acquired skills on one side and growth and welfare on the other side. He also insisted on the necessity of technology transfer as a principal ingredient for growth (Svennilson, 1971: in Wykstra ed., 43-56). Bateman insisted on the need to conduct cost-benefit analysis of training programs in factories and accumulated work experience, in order to filter the earnings vs. capabilities rationale (Bateman, 1967: in Wykstra, 387-408). In

another vein, Blaug, 2001 Compares costless on the job training with formal training, and concludes with the need for further research.

When the link between FDI and human capital is addressed, Robertson, 2003, remarks about the TNC community, cannot go unnoticed. He asserts the fact that it has lately trickled down its concern for the manufacturing element-to developing countries-while concerning itself with more advanced elements such as product design and marketing, and which constitute at the same time the most benefit generators (196). Here, a virtual circle emerges, where TNCs request human capital to invest in a country and this same country needs this physical investment for human capital accumulation. Therefore most previous research addressed the effects of FDI on recipient countries' economy and local firms rather than on foreign organizations' workers' development and on 'on the job' accumulated work and social experience_ namely 'human capital'. While Schultz, (1961), as well as Miyamoto in his working paper for the OECD development center studies highlighted human capital as a determinant of FDI inflows and reviewed a wealth of literature on that subject, In 1999, Mohtadi, tested the relevance of educational systems in MENA and their relationship to industry and technological spillover. He came up with recommendations to internalize learning by doing, through focusing attention in industrial projects on manufactured exports. The study highlighted that education systems were ineffectual in linking technology to increased productivity, thus the need arose for internationalization of industrial training. In 2003, Eid tested the effect of FDI on total factor productivity and recommended no more concessions for FDI, as it did not add much to the recipients in that respect . Lee and Vivarelli as reviewed by Thomas, in "Development and Change" (2007, 554,555) compared FDI with trade, to find out it had

more positive effects on the recipient country in terms of employment opportunities, as well as its advantages over local industrial activity, in terms of technological transfer. When addressing the competence of local investment, Diab was the most powerful when he exposed the low level of innovation system design and usage in Egypt, a lack of a general culture of innovation, as well as a severe gap between R&D and its use in industry (UN, UNIDO, 2001, 31-41).

Globalization, Development and FDI:

The research at hand links industrial development to human development, both of which could not be isolated from current debates about conditions and benefits of FDI on developing countries, as much as contemporary globalization deliberations. Hence, several texts are consulted and reviewed in the course of confirming those links. Moreover literature on FDI was found to be much linked to the subject of innovation and its interaction with all other socio-economic elements that produced the current global economic and development scene.

Mavrotas' and Schorrocks' edited, "Advancing Development" is an invaluable guide towards today's Global Economics, where Nissanke and Thorbecke stress that globalization should turn into a pro poor globalization, they insist that the international global order should direct its policies towards increasing FDI flows to poor countries having in mind their technological advantage and their contribution to human capital (in Mavrotas and Schorrocks, 2007, 252-272). In that same collection of articles, Singh emphasizes FDI as the most important factor in technological diffusion, if world development is ever to be attained (ibid, 416-434). In that same vein, Simai asserts that

FDI is a double edged sword when in his words "the extent to which these sorts of globalization enhance, secure, or restore human capabilities will depend on context and especially on how national policies adapt to the new demands, to what extent can they protect the losers" (ibid, 691). To him, it could only contribute to widening the North-South divide when it normally acts according to harsh market rulings, commending expansion of markets and profit maximization, which could undermine the developing societies' entitlement to secure lives, capacity building potentials and equal opportunity. Diverting funds away from the areas where they are really needed, such as in "education, public health, industrial capacity and social cohesion" (ibid, 691) could tip the scale of development away from a well wished-for win-win setting. Henry and Springborg Hold Europe responsible for a laggard MENA, and insist on well targeted FDI, coupled with local entrepreneurs' efforts to team up against under-development (223-228). Moreover they explain the unwillingness of the West to direct FDI to MENA on the basis of geopolitical reasons, rather than economic ones (29). However, Chang, in the introduction to his edited "Rethinking Development Economics", stresses the emergence of new policy directions to resolve the debate between FDI and Globalization. In his opinion, it is not fair to fight giants without the possibility of entering in junior partnerships and learning the rules of the game (11, 12). As Nayyar sees that resolving the Global debate would eventually resolve the development impasse (in Chang, ed., 64), while Khor, suggests a common interface between local policies and the world economy, with the international global organizations such as WTO adopting the realm of investment as well as trade with offered opportunities for the less fortunate, especially concerning international FDI policies (ibid, 527). Ocampo goes deeper as he depicts a

two-way out for the globalization dilemma; 'Linkages' and 'Innovation' (ibid, 97), whereas Chang cautions that TNCs are not losing loyalty, in effect, as they become global, because the top ranks, he depicts, are still reserved to leaders from their countries of origin, as well as Their R&D activities which are still, at least, regionally biased (ibid, 263). Home countries still reserve skill-intensive and control operations for themselves while diffusing all other manufacturing operations, a pattern that eventually turns out to be very cost effective. Restraining Host countries the right to such refined and power-loaded functions as in design, production planning and marketing, denies them the very essence of empowerment that is entailed by an 'FDI for development' approach. Along the same path Lall and Nolan note the complexity of the global scene as it gets dimmer for developing countries (ibid, 277-299). As TNCs dominate the scene with their economies of scale, their technologies are getting more and more complicated and expensive, thus, Lall forewarns that learning is more and more technically specific, which renders the process of capability building more difficult (ibid, 285).

Mounshipouri, Welsh and Kennedy prove that FDI is good for human development in recipient countries. Consequently, they urge states to attract and at the same time control its activity. Again they specify human capital more as a determinant of FDI, before it becomes a result, and that it beats portfolio investment in its effects. They also depict the need to be selective about the kind of FDI to attract if the recipient country cares for accumulating human capital. In addition to the previously mentioned literature, a wealth of other studies traverse the same path of identifying determinants of FDI, and specifying its spillover effects; such as those carried out by Goerg and Greenaway, 2003,

Blomstroem and Koko, 2003, Noorbakhsh and Paloni and Youssef 2001, Hanson, 2001, sadik and Bolbol, 2001, Alderson, 2004 and Wang, 2007.

As for Fortanier's article, 2007, she determines the role of the country of origin as a determinant of FDI effects on the host, and calls for more country specific and firm and industry specific research (host and origin) to further investigate results.

A pressing example surfaces, while studying the effect of foreign investment in the software business on indigenous local investment in the republic of Ireland, O'Riain (1996), marks Firebaugh's argument about FDI's effects on host countries, that "although foreign investment produces worse growth effects than domestic investment, … [it] does not inhibit growth" (Firebaugh, 1992: in O'Riain, p. 91). Let alone the developmental Irish state's custody, common drawbacks of the subsidiaries' manipulative environmental and financial protocols, were offset, in the Irish case, by the good spillover effects those subsidiaries produced; such as enriching the local abundant workforce expertise level, and fostering an indirect competition medium; that helped expedite the ripening of the local owned software companies, stretch to the global horizons.

Concomitantly, and on the other hand, his study affirms Dixon and Boswell's research findings (in O'Riain 1996, a, b) that "dependence on foreign investment ... appears to inhibit domestic investment through negative externalities associated with [such] dependence, ultimately reducing growth over the long term" (ibid, p.91). An interesting finding of his, was that, if foreign firms "provided learning opportunities for

[local] labor, they also competed for scarce [local] labor [in this specific field of high tech. industry]" (ibid, p.93).

On globalization, Robertson insists that poor people should internalize the global project, work on its democratization and claim it as their own, in order for it to be beneficial and to function as it is intended (263). That view goes hand in hand with Smith's definition of Global culture, in his article edited by Featherstone in 1990. He defines global culture in a unique way. Building on his definition, rather than seeking it in different practices and modes of life, one can detect it in other universal functional modes such as the way of doing work, universal values and beliefs that cross borders, same as in other global great systems of law and human rights. The new global culture in Smith's view would be considered a melting pot of diverse cultures (Smith: in Featherstone, 171-191).

A Social Significance of a Capitalist Transformation

Tomaney examines the shift from Fordism/Taylorism towards post Fordism in light of the paradoxes of skilling vs. deskilling and rigidity vs. flexibility. In his opinion, the most central aspect was that of decentralization of management power which surrendered in favor of more worker autonomy. That, as he notes it, places the issue of changes in work organization as the most prominent feature of post Fordism. Highlighting the relationship between the role of organized labor and these new forms of work organization he admits that "In some accounts, these new forms of work and

production are ascribed liberating powers for labor and in others, they are linked to wider processes of societal transformation… a new form of industrial organization" (p.159)

Labor, thence, is considered no more a cost; rather a capital; with a central role in production processes that have now transformed into the flexible state. Tomaney insists that the production worker's 'intellectual participation' is an imperative if the firm is to honor demands competitively. In his perception, "[t]he return to craft [under post-Fordism] is deemed to be inherently beneficial for labor, even if labor is not organized." (p.160)

In another vein, Sheila Cohen (2008) highlights the very central question raised by the collection of articles, in "Patterns of Work in the Post- Fordist Era", whether or not, post-Fordism, entailing a 'rediscovery of labor' or a reorganization of production processes and work, leads to a more aggressive pattern of consumers "submissing" workers. While noting the prevalent perplexity concerning the reality of the change in work patterns from Fordism to post-Fordism (Cohen, 152), she agrees with Huys et al. on a more precise identification of 'post-Fordism' as 'neo-Fordism' (Patterns of Work: 28, Vol. II). Sheila's proposal is accounted for by the vast variation of flexibility in worker control patterns each in their own respective industry. Ranging from intense Taylorism, to flexible just-in-time manufacturing modes, the evolution of how things are done in the factory could then be viewed as a normal evolution rather than a clear cut development from one state of affairs to the opposite other. She strongly supports Du Gay and Jones (Vol. II), that, in many instances, the line is crossed back to 'routinization and

standardization' in a more intensified manner, in work areas previously considered very autonomous (e.g. social work). Sheila confirms Mckinley and Starkey's stand in Patterns of Work, (p. 357, Vol. I), that empowerment, which seems to be a lost virtue in a new confusingly compromising world, is an aggressive mode of 'Fordism in disguise' (in Cohen, 153). A perfect portrayal of this emerging situation is well depicted in the words of a quality customer service worker unintentionally critiquing post-Fordism in a casual manner: "This comes from the top; they are striving for a good image, while at grass roots we're still in survival mode" (Grimschaw et al., vol. 2, p.444) such sentiments are further traced, and buttressed by a stronger feeling of despair when workers have to deal with mixed or double messages coming from the top. Eventually, trapped in the midst of a 'quantity versus quality' catch, that is perfectly translated into a sneaky dilemma of 'teamwork versus specialization' (Grimschaw et al., vol. II. P. 450).

Cohen tracks Du Guy's depiction (Patterns of Work, vol. I) of the same paradoxical situation between managers-emphasizing loyalty and customer satisfaction- on one hand, and employees-emphasizing low pay and long hours on the other. Along side the fact that managers' voices are better heard in research, she notes, compared to those of 'retail' workers which tend to get obscured regularly by union matters, tends to complicate matters further. He notes that this very contradiction is a sarcastic expression of the post/neo-Fordism dilemma at heart- Since the very spirit of motivation and commitment shed on the shop floor, is the most needed ingredient to deliver the most aspired and aggressively sought after, quality service (Cohen, 154).

Building upon Terry Austin's work, Cohen pinpoints the centrality of the everlasting conflict between the myths of empowerment vs. the realities of low trust,

which eventually turns the production process –whether in manufacturing or in the service sector- into a continuous ordeal on both fronts (ibid, p.155). She then goes to highlight this very power-resistance game from Holloway's words when he notes that "both management and the state depend on the successful exploitation of labor", which is the main theme of the conflict that always revolved around "the conditions of work" in many instances rather than the low pay issue (Austin, 2002, p.385, in Cohen p.155)

Cohen then wonders that if according to McCammon & Griffin "employers exert control over the content and performance of… jobs…for very traditional reasons [such as] sales, market shares and profit" (McCammon & Griffin, 321, vol.2), then where and how does this leave empowerment and human capital development? (Cohen, 157)
With such a harsh world, the research at hand might have to focus on the unintentional rather than the planned sham development, one that occurs casually along the work process. It all takes place while managers are seeking quality and quantity and seeking deadlines, and where employees struggle to make a living under suitable work conditions.

A Japanese Version

While post Fordism in Elam's opinion features a partial but major reformulation of the historical development of capitalism (in: Amin, 1994, p.43), he totally agrees with Shonberger, 1987, that the Japanese success *a la* neo-Schumpeterian, was due mainly to "the simplicity and frugality" rather than "the sophistication and daring" of their modernly developed technological production systems. He refers this phenomenon to Monden's concept of "autonomation" which means "automation with a human mind"

(ibid, p.48) and along the same line places a greater emphasis on the importance of manual labor which was and still is widely used in Japanese more so than the CAD/CAM systems.

When Elam scrutinizes the Toyota system success ingredients, on the techno-economic side of post-Fordism, he singles out the 'social' rather than the 'technological', in the realm of innovation. "[R]elatively simple and inexpensive" (ibid, p.48) were his words to describe their production system, which in turn lends itself to easier monitoring and quality assurance and most importantly to more and better flexibility. He praises the use of mechatronics rather than the most advanced computerized systems which eventually leave room for the much needed "human judgment and discretion" (ibid, p.48) Their use of the "Kanbans", which are the main characteristic production controls in Toyota factories, constitute in his opinion "a highly efficient low tech' substitute" (ibid, p.48) when compared to highly complex computerized counterparts. Elam urges one to understand the neo-Fordist revolution as an extended human relations', or better, a social revolution, not necessarily all technological (ibid, p.49). The Toyota 'Autonomation' which designates "automatic control of defects" (ibid, p.49) as Elam conceives it, requires as its central ingredient, "a willing and able workforce" one that would 'internalize' the spirit of the practice (ibid, 49).

Global Toyotaism

As for variations in post-Fordist modes, "New Global Fordism" is expressed, to describe neo-Fordism *a l'Americaine*, where American TNCs merely transported good old Fordism globally. It was coupled, though with a couple added ingredient demands

that were imposed on global workers: specialization and flexibility. The divide thus remained the same: Conceptualization on one side, and execution on the other. It resembled much and fuelled the widening split between skilled and unskilled labor (Lipietz,: in Fujita and Hill, 1987, p.25), or so to say between north and south. Fujita and Hill note also that unlike its Japanese counterpart, the new form of American TNCs capitalism, "exacerbate" uneven development (Fujita and Hill, p.27). This phenomenon continues to take place, while the Japanese, especially when it comes to their TNCs, tend to decentralize and thus contribute more to development in host countries (ibid, p.24). As a result, divides in Japanese TNCs tend to narrow or even disappear, both, in the realm of global space and locally in the workplace (ibid, p.28). However, on a more micro level, Fujita and Hill insist, that Japanese firms, would be branded as "reluctant multinationals". This is mainly "due to the character of their production systems, [which incorporates] capital intensive manufacturing, a [strict] social contract based upon a lifetime commitment to core workers and long term relations with parts' suppliers" (ibid, p. 29). Subsequently, Fujita and Hill noted Emmot's account of their, financially pressured, shifts to outside markets in the 80s. Going global for the 'Japs' was a portrayal of the very concept of "global localization" which featured an obligatory partnership between local attention and global manufacturing. That meant they had to transplant complete miniatures of their local manufacturing chain system, to the global arena. The miniatures had to integrate all of the manufacturing procedures just as it always did back home. As it was a matter of national pride to maintain Japanese quality over the globe, integrated production systems had to be reproduced everywhere, for they were the key (Emmot 1992, p.30)

FDI, Not All Virtue

When FDI is considered, especially, in light of its overall effects on workers in the host countries, the issue of TNCs' popular mischievous accounts hovers all around. Moreover, TNCs' long detected differentiated politics towards their workers in host countries, as opposed to those in countries of origin, are proven to be nothing but real. In one of the many works, an abundant literature on the subject, Lipschutz and Rowe note American TNCs' exploitation of host countries' workers, in the apparel industry, and the abuse of labor rights and labor protection regulations, in outsourcing to developing countries. These violations coupled with the most damaging double standard practices in levels of work conditions and worker wages depend a great deal, more or less, on the laws in the host country that govern FDI and regulate its modus operandi, be it a subsidiary or a foreign investment. They also depend much on local politics and the original condition of worker rights in their locally owned factories former to concluding FDI arrangements. However, as much as they are of an utmost centrality in primary investment decisions, as well as in governance modes, in such firms, matters of the extent and power of the local government and/or of local unionization, and their workings with Foreign owned or managed firms, could not be attempted in this research, for time and scope constraints.

When Human Capital is in the spotlight, the concept of "General Intellect" could not be disregarded. As Virno asserts, in his analysis of Marx's 'Fragment on Machines', Grundrisse, "What is learned, experienced and consumed in the time of non-labor is then utilized in the production of commodities, becoming a part of the use-value of labor-power

and computed as profitable resource." Moreover, "Even the greater 'capacity to enjoy' is always on the verge of being turned into laboring task" (Virno, 2007, p.5).

Hence, the theory of human capital is best exemplified in the concept of Marx's General Intellect, one that represents the ideal form of Human capital that has developed unintentionally throughout an intricate era of materialism. In Virno's words: "According to Marx, the general intellect – that is knowledge as the main productive force – fully coincides with fixed capital_ that is the 'scientific power' objectified in the system of machinery" (ibid, p. 5). He notes Melfi's observation of the modern Fiat factory, where knowledge and human lingual interaction were concerted in a co-operational way that has taken precedence over the existing system of machinery.

Virno also asserts Marx's situation on post-Fordism where "conceptual constellations and logical schemata that cannot be reduced to fixed capital play a decisive role, since they are inseparable from the interaction of a plurality of living subjects." The 'general intellect' as he sees it, is about "formal and informal knowledge, imagination, ethical inclinations, mentalities and 'language-games'" (ibid, p5). He then goes on to link the concept with post-Fordist labor functions where there exist "thoughts and discourses that function as productive 'machines' in their own right, not needing to take on a mechanical body or even an electronic soul" (ibid, p5).

According to Virno the General Intellect is manifested in what he calls 'Mass Intellectuality' which forms "the entirety of post-Fordist living labor (to the extent that it is the depository of cognitive competencies that cannot be objectified in machinery". In other words he accedes, here, that, "the more generic attitudes of the mind come to the fore as productive

resources; these are the faculty of language, the disposition to learn, memory, the capacity to abstract and relate, and the inclination towards self-reflexivity, [and that,] General Intellect needs to be understood literally as 'intellect in general': the faculty of thought, rather than the works produced by thought …" (ibid, p6). He asserts the contradiction between Marx and the old schools of 'thinking', by Aristotle and Hannah Arendt, to whom it was "a solitary activity with no exterior manifestation", while Marx has maintained it to be more of a public intellect: "In post-Fordism, the 'life of the mind' becomes extrinsic, shared, and common" (ibid, p7).

Transporting the notion to a higher level, Virno concludes with a question of whether this newly formed general intellect with its public character "which is invoked today as the technical requirement of the production process" could transpire into a basis for a radical "new form of democracy, a public sphere antithetical to the one anchored in the state and its 'monopoly on political decision'" (ibid, p8). He insists that one would only envision such an outcome if the new form of intellect takes a life of its own, independent from the production realm, "affirm[ing] itself as an autonomous public sphere"(ibid, p8). At the same time the metamorphosis of capitalists' relations of production into an autonomous identity contingent upon the general intellect, independent from the state, would be a necessary condition (ibid, p8).

Fordism/ Post-Fordism, Scrutinized

Ever since the 1970's, Smith believes, the managerial scheme of post-Fordist scheme's claim to impart empowerment as well as cultural transformation to both workers and management styles, has been nothing but a big deception. Claiming mutual benefits from the new flexible work techniques have proved more fraudulent than real.

He refers to Martin's 'integrationist Perspective' where management exerts real efforts to instigate 'cultural cohesion and 'industrial harmony' only as a means to an end, where the resulting employee commitment and identity would eventually benefit the organization's image as well as its sales targets (Martin, 2002, in Smith, p. 179).

In his review of Fordism and Post-Fordism (Volumes I and II), edited by Huw Beynon and Theo Nichols He also cites many critical theorists in the field, such as Willmott (1993), Wright (1994), and Stephenson and Stewart (2001) who attest to the reality of that ever-glorified practice as 'cultural colonialism' or 'cultural imperialism', where managers as well as proponent scholars of the post-Fordist theory seek for workers to 'internalize' the formers' very own principles- whereas they remain in themselves as contradictory as ever be to the natural conflicting relationship between capital and labor. In his words, "The goal of this cultural control is to conveniently by-pass the contradictions that are inherent in the capitalist employment relationship and undermine worker collectivism and solidarity, being trade union, workplace, and everyday collectivism" (Smith, in: Beynon and Nichols, ed., p179)

Smith refers to Beynon and Nichols' rejection of the over-simplistic conception of Post-Fordism as a "homogeneous paradigm shift from Fordism" (ibid, p180). He also denotes Alonso and Martinez Lucio's view (2006, ibid) which runs in the very same vein, emphasizing the mere extension of earlier Fordist production modes into a neo-, rather than a post-Fordist mode. He sees Fordist vices such as "worker control mechanisms" and "attempts at cultural manipulation", to persist, if not to intensify. While this might be

taking place on a different, more complicatedly subtle level, it might prove to be psychologically, hence more dangerously, harmful (ibid, p180). As Smith states "there are examples of where cultural imperialism, combined with the very real stresses and pressures of new so-called 'empowering' work techniques, have resulted in cases of *karoshi* – the Japanese word for death by overwork." (ibid, p179) In this stance, support is established for the works of Wilson and William et al., as well as Wood's (ibid, 181), in their same stance vis-à-vis post-Fordist and its relation to traditional Fordist management techniques (ibid, 180).

As for 'flexibility', Smith notes Murray's and Pollert's positions (in Smith, pp182, 183). While Murray "argue[s] that flexible specialization does not benefit shop-floor workers" (ibid, 182), Pollert "theoretically links flexible specialization with the flexible firm model, and argues that this is not a new phenomenon, as capital has constantly demanded that labor be more 'flexible'". While "Pollert agrees with Beale (Pollert, 1994, ch. 3: in Smith) that 'flexibility' is an ideologically loaded term, ... [he] is critical of 'moderate' trade union leaders who accept this management discourse as inevitable, as it is divisive and ultimately weakens the union movement" (ibid, 182). Smith also takes note of Bramble's research finding, that an ultimate goal of management is to engender "a homogenous organizational culture" and to co-opt employees to avoid any possibility for collective action. According to Smith, "Bramble found that these management methods resulted in a routinization of work, as opposed to any upskilling" (Bramble: in Smith, 183).

'Lean'-meaning the new suggested work system including 'continuous improvement' techniques (Kaizen), team work, and just in time production techniques- was first initiated in Japan. As for critiques of 'Lean' production techniques, Smith recalls the claims of both Windsor and Boie of disqualifying the integrity of the concept of 'Total Quality Management', on implicit cultural grounds. He notes their argument that, "behind the illusion of employee empowerment lies team peer pressure and self-surveillance, as workers are subjugated by the values and norms of corporate cultures." (Windsor and Boie: in Smith, p182)

In addition, Smith remarks Skorstad's less deterministic position as to the logic of 'leaner' work methods and its effects asserting that, economically speaking, the core of 'leaner' is pressuring less workers to produce more, which by itself is prone to generate worker resistance rather than their cooperation (in Smith: 182).

While Smith marks on the other hand, Womack et al.'s view of lean production as "the most efficient [and therefore, the most sought after] form of working" (in Smith, 183), he personally views its aim as to eliminate 'waste', which ultimately means taking labor out of the labor process" (183). He refers to Berggren's perception about it as 'lean and mean', when the latter's findings about inhumane work conditions that exist in, the so called, lean Japanese transplants in the US, are verified. In Berggren's view the ruthless hysterical tempo resembled its former Fordist counterpart, in effecting both, physical and psychological harm to workers. As he saw it, these firms nonetheless guaranteed worker commitment as well as a rather continuous flow of recruitments by paying relatively high salaries (Berggren: in Smith183). Smith notes the same evidence

by Parker and Slaughter, who designated 'lean' as 'management-by-stress' (Parker and Slaughter: in Smith, 183), and confirmed an added, hidden, 'culture of fear' from the nightmare of plant relocations if workers do not perform (ibid, 183).

While Smith sees Danford affirming the same stance as for 'lean' adding to it his skepticism about the existence of a win-win situation under the capitalist system whether Fordist or post Fordist, as a result of continuous 'downsizing' frenzy (Danford et al., 2005, in Smith, p. 183), his conclusion that management will never seize its attempts "to gain employee cooperation and undermine collectivism" (184), could not be contested.

Through studying American apparel industries in the US, Moor and Littler comment on the labeling of Post-Fordist facilities as ethical, fair, providing good pay and healthcare, as well as sweatshop-free, by confirming Aglietta 2001, Murray 1989, Lash & Urry, 1994, in their views post Fordists only transported their Fordist agenda overseas, where they "outsourced the most routinized aspects of production" (Moor and Littler, 701).

In linking the new globalized capitalist system to post Fordism Moor and Littler see that "[i]nstead of vertical organization, corporations increasingly spread horizontally using synergy and globalized outsourcing, marking a new phase in long-established global divisions of labor." They also supported the view "[t]hat such global outsourcing was happening at all, and that it frequently involved considerable exploitation, became popularized through media coverage of the global justice movement" (ibid, 107). They become even more explicit in their description of what they stand for when they clearly insist that "post-Fordism did not entail the erosion of Fordist methods of production, as

many commentators have pointed out (Murray1989, Rustin 1989), [and that they] only need to look at Taylorist-style factories in China, burger flippers in Illinois, or the direct marketing telephonists in Aberdeen and Bangladesh, if [they] want to see Fordism alive and well inside post-Fordism." (ibid, 717)

Vidal highlights Mackay's emphasis on 'worker commitment tactics' enforced by management. He points at three different flexible regimes each with a distinctive strategy. For Mackay, as Vidal notes, worker commitment equals 'labor control, for which management use both internal as well as external means in order to achieve it. As for internal strategies, Vidal marks Mackay's finding that internal commitment strategies range from 'coerced', to 'Purchased' or to 'bargained', depending on existing internal production systems, HR routines and on unionization status, respectively. In Vidal's words "these various forms of partial commitment are sufficient because flexibility in each case is engineer-driven." (Vidal, 2008, p371) As for external strategies, with the support of the host governments, firms depend on 'strategic localization' as well as strict screening recruitment procedures, where gendered and extremely exploitative techniques are relied upon.

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In addition to Mackay's grounds for variations in employment strategy formulation -such as the nature of the industry and its market conditions, the company's operations and production system, the level of worker organization and the status and the internal organizational system of the mother company- Vidal sees it as imperative to study the effects of the internal political and cultural factors that in his view should play a

greater role in determining such variations. He sees worker dispositions, as well as their set-in routines, as two main factors that should never be undermined. Moreover, for him, managers' attitude is a crucial element.

He agrees with Adler and Borys (1996) that Fordism as well as neo-Fordism is not all vice, and that it can lead in many instances to build worker capacity as much as to restrain it. However he is more inclined to believe more in internal politics and organizational culture rather than on market forces alone. In his words: "increased managerial prerogative and labor control are not dictated by particular technologies or market demands. The strategies of competitors loom large, but ideology and political choice are also fundamental elements determining managerial strategy" (Vidal, 2008, 371).

Leadership, Industrial Psychology and Human Capital

A wealthy literature lends support to the centrality of leadership and management styles in affecting workers' responses to management and impacting human capital, accumulated by factory workers. Of the many books, found on the subject, three were mainly very handy and would serve as operational manuals for the study as well. The first one is Landy and Conte's "Work in the 21st Century", stressing the role of the transformational leader and cross cultural leadership styles and the global manager concept. The second is Jewell and Siegall's Contemporary Industrial/Organizational Psychology", a rich manual which highlights among other things, the importance of the leader, as well as employee training and socialization. The third book, is Lawless'

"Effective Management: social psychology Approach" is mainly concerned with the leader as manager and about effectiveness in managing the workplace.

Research Significance

As learned from, the previously accounted for, literature, this research responds to a dire need for FDI assessment in general, on a micro firm/factory level and on an industry level (automotive). No research has been conducted before on human capital accumulation in the industry, in Egypt, or on the differential thereof between factories of foreign origin and those of national private origin. Thence the research at hand fills a significant gap in that field.

The research would make a humble contribution by adding to the theoretical knowledge in the fields of Human Capital, Globalization and FDI studies. It would also benefit the study of 'Development' and of developing countries. It would add certain input to fields of sociology and applied industrial psychology. International and national policy makers, as well as international development officials and international development and finance executives in general would benefit from the research through redirecting there development strategies and resetting their policy structures as they focus on the realm of investment and its relationship to human capital accumulation in a practical way. Policy recommendations could be translated in applied measures to divert development funds towards actual business undertakings in developing countries that bear within it the important component of technology transfer and/or redirect the funds towards more support for indigenous budding and enlightened business communities that

could lead the way out of the impasse. Local policy officials could also redirect their policies accordingly to interface with the international global order in an enlightened way and to reset its concession policies towards FDI or towards gaining international support and coupling it with local tribute for local entrepreneurship that is translated into physical and financial sustenance for their investments.

Conceptual Framework

The research at hand takes off from the famous old works by Inkeles and Davis with regards to a social psychological approach to development devised in the 1960s. It rests upon the proven unbeatable fact that factory experience occupies second place, after formal education in positively altering workers' behavior into being more modern, meaning civilized. It does not however concern itself with confirming previous results_ with regards to positive effects on behavioral and attitudinal change as workers are exposed to such experience. It simply takes it to a more focused level [firm level], while recoiling it with an easier researchable construct of human capital accumulation. Yet it delves deeper into differentials in effects as resulting from differentials in modes of management, and leadership styles.

The Factory and Personal Development

Inkeles et al. established that the factory as one major influencing factor provided a large scale productive organization, with its neutral identity and its common goal, essentially being, effective operation and efficient production, bore the leading

responsibility among other work settings and similar organizational settings, of producing such modern man. While accumulated human capital in the factory unit is costless and unintended, it is mostly effective because, in addition to the physical layout of the factory- generally 'distinctly set off and clearly demarcated', and to its nature of work organization- 'sharply outlined', labor division and hierarchical order, 'precisely and rigorously maintained' (158), the accumulation of technical skills needed to accomplish the work in such benchmarked large scale productive institutions, is coupled with social capital acquired, as s result of workers having to deal with a body of social units on different levels, sometimes with no preset rules (18, 19)while interpersonal relations in the factory take a new extended dimension (158). Moreover, in matters of civic development, they even found out that factory and school experience equalized (260,261). When comparing school and factory as engines of personal development, Inkeles et al. observed that the factory complemented school regarding the same subjects workers had missed learning in latter-through training they followed throughout their factory life. In their opinion, "the organization of factory and its mode of functioning embodied a series of fundamental principles to which men from traditional background would respond favorably" (158). The factory, as they saw it, is a vivid example, putting at work, the same techniques and modes of organization through which the positive values and principles were learned in schools, namely systems of "modeling, generalization, exemplification and reward and punishment" (158). Such values helped shape positive attitudes and consequent behaviors especially those concerned with 'efficacy', 'readiness for innovation', 'openness ... to change', 'planning and time' and 'respect for subordinates' (158-160)

One of the central questions which concerned Inkeles et al. was 'which factory modernized men rapidly and completely and why?' (191)Yet, for them, the factory did not represent a uniform entity. Their developed 'factory modernity' scale helped them single out those factories with distinctive qualities, which were mostly likely to yield the reviewed modernity results.(178,179) Those benchmarks included human relations, technical dimension, number of worker benefits. Added to that and most importantly, management attitudes and style, their function as role models, their relationship with their workers, their exigency of a certain quality of their workforce, their provided training options, as well as their care for the personal development of their workers, all of which had the greater impact, (187,188) while a dimension such as factory size, did not have such an otherwise expected greater effect on factory rating (178,179).

Factory Modernity, Reviewed

While the core, such great a work, rested upon, 'Modernization' was severely criticized and almost eschewed throughout the subsequent long course of the development deliberations, many scholars have paid tribute to the essence of such undertaking. Since a most valuable addition to social sciences was proving that adult experiences and not only childhood ones, can cause change in people's attitudes and behaviors, the study gave a glimpse of hope to development scholars- 'modernizers' (at that time). Realizing that change is still possible in all stages of a person's life, through a multitude of other means above and beyond formal schooling, was met with a sigh of relief from most advocates of 'change' at the time. Ranging among other factors from

urbanization, through mass media to exposure to modern formal institutions such as the factory, the latter was the most influential.

While sociologists Were interested in the social aspects of personality change, In his quite interesting essay, Banuazizi was one, of several scholars, who recognized the value of the Inkeles et al.'s project, in his article, 'Social-Psychological Approaches to Political Development' when he tried to fairly establish the relationship between development on one hand and the traditional, cultural and socio-psychological aspects that characterize indigenous societies on the other. He started by viewing classical political development theories, their various critiques, and the impact these critiques have had on the perceived shift in their relative approaches of study. Through placing emphasis on the psychological and cultural factors to have had a greater-effect, on the development or under-development pattern of different societies, he traced back those factors to assert that they were mainly caused by the traditionally stated historical, political and economic factors. In viewing the different schools which clearly illuminated that shift, he actively delineated the efforts of Alex Inkeles and his colleagues, in that respect, carefully analyzing their psychological modernity approach and scrutinizing their overall modernity (OM) scale specifically designed for that respect. Eventually, along the same lines of thought, he depicted what he termed a "de-ideologization" of the "dichotomizing" modernization school, and a novel inclusion of "traditionality", not as an obstacle to development but rather as a compatible -and sometimes reinforcing- agent for the demands of modernization. A major shift in the center of development studies towards the cultural-psychological- element as a major

determinant of change, then took precedence over its structural counterpart. The newly, then, emergent American discipline of "social psychology", and its centerpiece principle of the study of personal attitudes -as determinants of social- provided an invaluable contribution in this respect, as opposed to national and historical trends.

Banuazizi singles out Inkeles-Smith research program as "the most extensive, systematic, and methodologically rigorous treatment of the concept and its ramifications". Using the industrial factory as the nucleus of their model, of an institutional pattern, Inkeles and Smith underline traits, which are, supposedly, newly instilled, in the modern factory employee; as opposed to his previous personality traits. They jointly developed, for that purpose, the "Overall Modernity Scale" (OM), which included a set of psycho-social traits- portraying a modernity "syndrome" which included many social and psychological elements that a man appears to develop as he gets exposed to the new structures of modernity (e.g. increased ambition, a greater interest in science and an augmented belief in its efficacy, an increased respect for time, etc

This extensive effort, as viewed by Banuazizi, led Inkeles and Smith to devise their theoretical propositions that, first, exposure to a modernizing experience like "the factory" in that particular case, or any other modernizing institution in general, would engender a new set of attitudes and, accordingly, behaviors-delineated in their unique 'syndrome of psychological modernity'. Second, a person remains susceptible to all these modernizing experiences, not only in childhood, rather in all stages of his life, and

finally that these stages in attitudes transcend 'ethnic', 'cultural' and 'national' differences.

Banuazizi perceived that, whereas inkeles' research proved that changes in attitudes and values are usually accompanied by changes in behaviors- that would in most instances lead to political development, institutional modernization and thus to a nation's progress, he deemed such finding, as the main responsible factor for raising the controversy of whether or not economic and political development could be helped by psychological modernity. However, he noted the lack of "cross national and longitudinal research" that would fairly depict the relationship between psychological and structural factors in that respect (Banuazizi in: Huntington, Weiner and Almond, 1987, pp. 281-316).

As Bendix' "de- ideologization" of the old conception, and Huntington's "corrective reaction" to the long mischievous beliefs of early modernizers started a domino effect-gradually incorporating tradition in the study of development as a compatible rather than an impeding factor-, and although the subject of "tradition" had been still obscure to many in the 80's, "[t]raditional thought and behavior" were finally believed to have been "as reflective, creative and responsive to individual and collective needs as their modern counterparts". Obviously, the integrity of such a finding was conditional upon more exerted efforts on the part of its constituents in order to make the appropriate psychic and ideological adjustments to better suit their changing circumstances.

Once the problematique of culture and tradition, and most importantly, the conundrum about Modernization is set apart, that leaves a somewhat clearer passageway for more rudimentary work on the bare maneuvering of human capital accumulation and its differentials from a 'competitional' perception; A perception that sets 'North' and the 'Enlightened South' on equal footing. As novel as it may seem, it only befalls as a natural result, after all the deliberations about East and West, North and South, Development, Empowerment, Authenticity, and Globalization, to put different players in a comparable state. What is being researched here is a representation of a carry out trial with the intention to dig out for the similarities, only to come up with a rightful picture of the disparities.

William Form in his review, Comparative Industrial Sociology and the Convergence Hypothesis, Examined Inkeles' link between exposure to factory work and technology on one side, and the attitudes and behaviors of workers on the other, from a convergence point of view. While he came up with the result that although much work was needed to completely uphold the convergence stand, it was more supported than negated, at the time of his review. He principally refers to Inkeles' modernizing factory and his OM scale, as well as other concomitant works on the subject, such as Kerr et al.'s efforts (1960) to examine the values acquired from factory work. Those efforts were shortly preceded by Lerner's (1958) who tried to establish a link, that was shortly confirmed by Inkeles et al who attributed the acquired factory values and attitudes as "responses to common social structures…. and large scale organizations" (Form, 17).

Through Inkeles' work, the convergence of such hypothesis was, to much of Form's acknowledgment, more or less, affirmed. Form reviewed a few other studies that took the lead, such as the one by Kahl (1968) who worked on formalizing a measurement scale. As Form investigated the 'industrial experience' and its empirical effect on workers' lives, he located two studies on 'technology and social behavior' (6,7); one by Shiba (1973) and the other by Form (1976), both of which confirmed Moore's hypothesis, back in 1965 that different technology levels had certain different impacts on workers behavior and social conduct. Other studies, highlighted by Form to confirm the convergence hypothesis, were those on labor force commitment to industrial work in well set factories, even for those workers directly and freshly coming from rural backgrounds and heading towards factories. And while he preferred the term 'industrial mentality' over 'individual modernity', he cited studies carried out across the world, such as Tourraine and Ragazzi's (1961) on France, Bhat, 1969 and Lambert, 1963 on India, Chaplin, 1967, on Peru, Young and Young on Mexico, and Form 1967 on USA, Italy, Argentina and India. He stated that all concluded the same results, confirming the same degree of industrial commitment from workers with rural background as well as urban background, a fact that validated his line of reasoning that "[s]imilar demand conditions (stable employment, high wages, secure employment) everywhere promote[d] strong labor commitment" (9).

Moving one step further to compare the impact of technological complexity of a factory and its differential across different countries, Form found that Karsh (1971) and Fliegel (1976), paved the way for his study (1976) on automobile workers in four

different countries confirming the positive correlation and convergence, not only by becoming more modern but also by widening the political and social skills and capabilities of such workers (19). Additionally, as he shifted to critics of Modernity, such as Horowitz, 1960, Gunder Frank, 1969, and Wallerstein, 1974, who considered the approach as simplistic, he brought about Inkeles' defense that none of them carried out empirical research to refute his hypothesis. Besides claiming that, by modernizing workers they would go on and modernize the world around them, was never the focus of Inkeles' efforts (Inkeles, 1974, in Form, 1979). Form also noted criticisms of other scholars such as Schnaiberg, 1970 and Rau, 1978, that individual modernity is not uni-dimensional, their claims rested upon the fact that Inkeles et al never showed how multidimensional it was (Form, p. 21). Form contributed an important addition by Rau, 1978, about the importance of including, among other dimensions, 'instrumental activism', which evolved from dealing with factory machinery.

On a different note, however, Form exposed other weaknesses of the convergence theory. He asserted that the very theory that tackles the concept of developing mentalities through technological exposure, suffers a dire shortage in research of focal issues. Most importantly, Gender issues (factory modernity studies are all about men), which emerge as the most central to all. Shortages in examining cross national issues (historical accounts lack) are evident as well. Information about differentials of acquired factory modernity between workers in early industrialized countries and their counterparts in late ones, and about the extent to which the latters are catching up, with the formers, is also lacking. As for Inkeles' OM scale, Form considers it as too broad to

help firmly confirm convergence. He sees the necessity of working on a more micro level concept, such as the 'worker machine nexus' (22), rather than a too general and broad Overall Modernity (OM) scale.

Leong and Chang, 2003, held a similar view when they reviewed the subject of traditionality vs. Modernity. They found out that the modernization theory is 'alive and well' (1), only on the individual level. They did that after reviewing many researches done on the subject; especially Asian focus studies, a fact that, in their opinion, stimulated the need for more efforts to be exerted in the domain. Along the same trajectory, Schooler, 1996, praised the unintentional learning effects of the factory on workers. He denotes change to occur smoothly, because it happens along the collective common sense production activity.

In an attempt for abstraction that would help conceptualize the long time persisting development impasse, and when most historical globalizers would consider modernization as an early introduction of globalization, Robertson would strike a common righteous tone, following Amartia Sen's footsteps when he described modernity. In his opinion "to regard modernity as westernization, is to deny humanity its common heritage", because to him, such an attitude "induces ... a sense of powerlessness or inferiority that is hardly conducive to development" (p.204). Schultz took the matter further, when he stated that economic modernization (with its resulting income difference between countries) produces a disequilibrium that is only resolved by the country's entrepreneurs who seek to restore it. Restoring the macro through restoring the micro,

each in his private domain is the perfect working of a well functioning economy (1990, pp 1, 10 and 212). He quotes Faulkner's words to describe the centrality of human capital in a modernizing economy: "Man without skills and knowledge leans terrifically against nothing" (212).

Thus, a need has arisen for the thesis at hand, to examine differences in effects on human capital accumulation between Foreign Direct Investment and Private Local/ Investment. This need stems from a broader appeal to examine the effects of FDI on host developing countries, in general. Long pressing demands for micro level research, whether by country or on sectoral levels, have been sited by many researchers in the field, for the last few decades. However, the emphasis on determining the effects of FDI on the quantity and the quality of human capital accumulation in factories owned by expatriates and weighing those effects against those accumulated in factories owned by local businessmen in host countries is relatively new.

Chapter 3

MEASURING HUMAN CAPITAL:

INDICATORS AND METHODOLOGY

Methodology and the OM Scale

The Overall Modernity (OM) scale, in Inkeles et al.'s realm concerns a descriptive rather than a judgmental tool, describing a man with qualities that could be found in any culture new or old regardless of any nationality, with the only common factor, being his exposure to modernizing/civilizing institutions, regardless of their nationality. Building upon that, they stressed the need to transcend the term or the label: 'Modern' to the content thereof. That content that has been always present, even in the oldest civilizations on earth, and which were only successfully internalized and adopted by men as a favorable complex of institutional patterns, acquired through civilizing institutional settings (296,297). Thus the OM scale is about universally agreed upon, positive qualities or objective attributes of Men, common, to west and east, socialist, capitalist or communist societies, and commonly perceived as favorable; such as autonomy, being critical, eager to learn, etc.. "Indeed, being an active participant in the larger community,

being personally efficacious, and being open-minded and flexible are qualities, which have been and are very highly valued in many cultures….useful and desired not only in the United States but in Japan and not only in Communist Russia but in Mao's China and Castro's Cuba."(297) Furthermore the scale survived the dichotomizing indictment by measuring continuums of personal growth (maturity), rather than discrete traits (10).

Locale and Population

Three automotive factories in Egypt have been chosen as the sample of study. Blue collar workers in those factories constituted the research subjects, except for a limited population of white collar employees whose interview results would operate as control and validation means. Workers in three automotive factories in industrial zones in Cairo and the 10th of Ramadan City, which are all benchmarked as for their size, activity, amount of production, benefits, management styles and technological level. They have been interviewed in person, filling questionnaires, and observed.

Research Design, Sample Structure and Field Work

Facilitators

Personal skills and ability to communicate with all levels of professional workers provided the researcher with an opportunity to take a considerable part in the designed field work activities. Moreover, special contacts in the field facilitated the ability to conduct research on site, during working hours, as well as made possible, an almost complete access to data needed regarding rules and regulations of training projects and

technical assistance. Privileged access was also granted through conducting extensive interviews with managers of different departments. These were of an utmost centrality as they provided a means of verification for some of the questions that portrayed a qualitative, rather than a quantitative aspect. Even during these same interviews, observation was a pivotal ingredient to rescue them from the redundancy or common Questionnaires' traps such as 'response biases', such as 'acquiescence' or 'social desirability' sets (Inkeles and Smith, p. 56)

Samples have been selected according to worker factory life in each factory, involving fresh employed and three years' employed shop floor workers, in order to measure the increments in human capital for each worker. Samples would be controlled as for independent variables such as age, urban/rural background, formal education and previous factory work experience as borrowed from the Inkeles/ Smith research. Subsequently, the three samples would be compared against each others using a multitude of statistical analysis techniques, again as used by Inkeles et al., such as multiple regression, partial regression and co-variance analysis.

Although the original goal of the research was to benchmark the three factories according to the type of product, as opposed to the type of industry (automotive component field) in general, this was not possible due to the fact that totally foreign owned as well as joint-venture factories in the domain were already limited in number. Only two other foreign owned factories were probed: (Sumitomo, Nissan). One was into the manufacture of whole vehicles as opposed to the components, while the other was located in Port Saiid (another governorate), and it was relatively newly established so the

older-appointed worker group would have been missing. As for joint-venture factories, three of them were investigated: (GM, Ega, Temsa).While the three were again into whole vehicle manufacturing, One that co-manufactured parts along with whole vehicles, was situated in the 6th of October and was therefore discarded for the sake of remoteness from the other two factories. The second one had the double negative advantage of being newly established which again posed a missing long-time-appointed worker group. While the three factories were selected with logistical ease in mind, the Egyptian owned factory was selected for reasons of the possibility of gaining access to its workers during working hours, because of the researcher personal acquaintance with its owners. This factor was of utmost importance and caused maximum trouble because of the importance of minimizing the field-work effort; especially that individual interviews ranged from one hour to one and a half hour each. Besides being exhaustive to the interviewers themselves, it constituted a laborious effort for the interviewed workers, who had to exert double the effort to understand the questions before embarking on a demanding undertaking to provide answers. Considering, the social and educational background of the research respondents-holders of an Egyptian intermediate technical degree; namely graduates of industrial technical secondary schools-questions about attitudes, which constituted the majority in the questionnaires, are the most difficult to manage, An effort was exerted from both sides, in order to ask in a simple way and to answer; to clarify and to understand.

Field-Work Design

Added to these common field ordeals, were hardships pertaining to the relative factory management's unease regarding the whole process. First, apart from the acquaintance and the links, to them, researchers are undoubtedly intruding bodies that are sneaking into their kitchen during busy, eventful times, without any appealing presentable cosmetic. Moreover, taking the worker off his machine for that amount of time, constituted an unpleasant waste of productive labor time badly needed, especially at times of pressing deadline orders. One production manager of one of the plants who politely refused to receive the research team, made it clear that dispensing with nine workers a day (which is the number the researcher and two other assistant interviewers were planning to interview per day), would mean disposing of one whole vehicle a day for the sake of scientific research! A sacrifice they were not ready to fulfill at that time. Settling on the three designated factories for the research at hand should not insinuate that the process continued smoothly. Rather there were ups and downs. For example as for the joint venture factory, it took one month of trials of persuasion for the foreign manager to accept to receive us. He was trying to figure out what benefit could be capitulated from entering in such a venture at a time where he head pressing orders to honor. When we eventually got his permission it was during Christmas time (the factory was open and functional, though more into routine annual check routines, rather than in full fledged production mode), where we got an order from management to start and finish before his return, because during that time work was slowed down because of the holiday season.

On the other hand, while the totally foreign owned factory was on the other hand extremely cordial throughout prior communications, after our first interviewing day, we were asked to move out to another factory because they could not handle it while they had a sudden order that they had to immediately fulfill and send it to Europe through air freight. Again negotiations started during a period of seven days of frustrated halt, until we could restrict ourselves to a time limit per worker as well as promise to be flexible in the number of workers interviewed per day depending on their respective work load per day. That meant that we -interviewers- would head off for the factory one day, finding out that they could only interview three workers that same day. Another day we would find out that they had to interview as much as eighteen workers, for they would not be available for interviewing past that day. We would find out we had to wait for the second shift which usually started at four in the afternoon. As we have been interviewing workers since eight in the morning, which means they keep working for twelve straight hours that day.

Sample Structure

Deciding on a sampling criterion and thence a sampling technique, that would guarantee the validity of such an extensive research study, was troublesome. That came as a result of the fact numerous restrictive conditions. First, the availability of a limited number of factories who would let us conduct research on their premises, on their worker attitudes, with imminent implications on the effectiveness of their management styles, as regards the development of their workforce human capital. Second, there resurfaced a

serious problem of constraints set by factories' management on their maximum allowed time in which we could proceed with our interviewing activities, on their premises. Consequently, sampling criteria was set to follow an information-oriented sampling technique rather than a random representation sampling, or a highly purposive quota technique, which were both wished for in doing the research for maximum reliability. However, the very restricted and extremely controlled environment we were working within; meaning the circumstantial limitations we had to function within, dictated a decision to adopt some basics of the case study approach in tackling the research strategy, sample structure and research findings analysis. Such a decision was resolved in an attempt to avoid as much as possible any bias of research settings, within the situation we were presented with; as much as this approach offered us the opportunity to incorporate both qualitative and quantitative tools in our research, which was quite befitting, in that case (Baxter, 2008).

Subsequent to extensive discussions, we settled to setting our boundaries by specifying two intervals of recruitment times, in the factories which granted us entry. These specified intervals were then applied to all three factories; namely appropriated uniformly to the selected factories' worker recruitment lists or payroll records. All direct shop floor operators who were of technical secondary or intermediate education background, and who joined the factory within these two specified recruitment periods of time, had to enter the sample. While we proceeded with field activities other episodes took place that prevented us from interviewing the entire sampled constituents. Some of these events revolved around a number of discovered inconsistencies between the

different worker payroll records regarding their education qualification upon entry-our only controlled factor besides recruitment dates. Some other occurrences concerned a few workers on sick leave, as well as another few who continued quitting in the time during which interviewing took place; a common phenomenon!

The specified recruitment period of long-time appointed workers was set to be from 1/1/2004 till 1/1/2006, while the specified period for new workers was set from 1/1/2008 till 1/10/2009. These dates were set after a thorough investigation of factory worker payroll records in order to achieve the best possible balance in sample sizes for the different groups. The aim was to obtain more or less equal sample sizes in all three factories- each for its two groups of long-appointed and newly appointed. While the initial target was set at thirty long-time-appointed and twenty new workers in each factory, in reality sample sizes had to quite vary. Table3.1, illustrates the actual number of interviewed workers in each group for each factory.

Table 3.1 Sample Structure and Coverage

	Factory 1 Arctec Inc.	Factory 2 Autotex	Factory 3 Exilar Egypt	Total Sampled	Total Interviewed
Workers Sampled	18	24	71	113	

	Workers Interviewed		18		24		56			98
	New Workers		10		13		26-8		49	41
	Old Workers		8		11		45-7		64	57
	supervisors interviewed		1		1		1		3	3
	Total interviewed									101

As the actual number interviewed differed from the original sample size, for reasons of workers' sick leaves, their turnover during the research or some inconsistent payroll recording of the workers' education, we ended up with quite a variable sample structure; however one that provided a minimum acknowledged sample size for statistical validity purposes. It was then concluded with eighteen plus one supervisor, of them ten were newly appointed in factory1, here 'Arctec inc.' (an imaginary name), Twenty four plus one supervisor, of them thirteen new recruits in factory2, here 'Autotex', and last but not least, fifty six plus one supervisor, of them eighteen new, in factory3, here 'Exilar Egypt F4". As for female workers, which constitute a considerable number in Exilar, they had to be, unfortunately, excluded from our research on grounds that there was no existence of female workers in the other two factories; besides comparing the differential between the levels of human capital accumulated by female workers as compared to male workers in factories would be a formidable task however out of the scope of our present

research. Three female workers in the long-appointed operators and four in the new recruits, both in the two designated sampled periods of recruitments, had to be discarded from the sample.

Field Conduct

Before embarking on actual field activities, a lot of preparation routines took place. Questions were continuously revised, for clarity, comprehensibility and objectivity reasons. The researcher, aided by two young competent field assistants had to rehearse, switching roles in make believe interviews to avoid any unplanned real-life faltering. As they were quite experienced in field matters, the researcher learned a lot from them, regarding articulacy and other questionnaire handling formalities. On the other hand they had to pick up a lot of insight on what concerned the meaning of some questions, which had to do with connecting to them the specific essence and aim of the research.

These planning activities caused field to be quite a successful experience with minor instances of faltering which were, as well, turned into learning moments. Each interview was designed as to begin with a simple arithmetic test that had been extracted from a 'Pre-apprentice training for a test preparation' (Martin and Serich), (see Appendix A, for a version of the arithmetic test in English and in Arabic). Test time was determined at a maximum of thirty minutes, subsequent to a series of dummy runs on school children in different primary levels. After the designated half hour or upon

finishing with the test, the interview would begin with a warm salute, a quick general and simplified description of the aim of the interview, followed by the questionnaire in colloquial Arabic (See Appendix B for a version of the worker questionnaires in English and in colloquial Arabic).

Preliminary (questioning) interviews took one and a half hour to complete. While The arithmetic test time had to remain constant, questioning time, was, later, cut down, owing to a learning curve, to a range of forty minutes/ to one hour, depending on the ability of the respondent to understand and to respond to the question, his level of trust, self confidence, intelligence, and the amount of enthusiasm and the type of chemistry produced between him and the interviewer. Interviews were long and demanding in terms of the amount of concentration, reflection and thoughtfulness required; a common and universal dilemma, associated with attitude questionnaires. The nature of questions a propos attitude are the most attention commanding, and the most exhausting for both interviewer and respondent. However, they spur interest on the respondent's side, along with an air of compassion on the interviewer's side due to their leaning towards a disclosure of some inner dispositions. Effort to avoid leading questioning , together with avoiding spurring any response biases, such as acquiescence set or social desirability set kept continued to be exerted through shared remarks after each session and before the beginning of sessions. Moreover, discussions never ended regarding different characters of respondents, and feedback as to the variable proper ways to handle situations of frustration or anger from several respondents' reactions and predispositions. Besides the shared positive reinforcement, after interview remarks were exchanged and a record of

every respondent's character and cooperation level was sustained. At all times, patience was always a key motto.

Observation of the factories premises, management style and practices, the nature of work routine, production, and one to one relationships between workers, supervisors, as well as across the different hierarchical structures-subordinates and superiors-, was guided by an observation list (see Appendix E for an English and an Arabic version) and started on the researcher's part, from the first day of establishing contact with the factories, throughout the whole field course, and ending with the last day of concluding management interviews. Observation with a bird's eye view on the factories shop floor helped understand the different work environments in depth and in breadth; a fact that, is thought as offering the research an invaluable support in a final holistic analysis of quantitative research outcomes. Sharp, objective observation skills were incorporated, as well as engaging in endless informal conversations with supervisors, HR personnel, Segment officers and engineers, helped gain an insight into the different mediums. These off the record intermittent conversations portrayed informal focus groups' prototypes. This mixture of formal and informal research tools, would not have been possible, if the researcher has not had taken part in the field experience. A field experience of more than two whole months of on-site activity embodied an otherwise unattainable participant observation undertaking.

A Well Cultured, Socially Well- Adjusted, and Technically Skillful Worker

The research of data gathering and methodology mainly draws on Inkeles' research methods, coupled with other relevant literature that was consulted such as 'Classical and Modern Regression Applications', (Myers, 1990) and 'Doing Development Research', by Desai and Potter (in Thomas, 2006, 560, 561). A pioneer expert in research methods, who happened to be an old family friend of the researcher's parents, was also heavily called upon for both advice and support on how to design proper questionnaire booklets, and most importantly in the complex area of statistical analysis. Research literature includes among others: Myers, 1990, Classical and Modern Regression Applications and Doing Development Research, by Desai and Potter (in Thomas, 2006, 560, 561). Validity would be secured through multiple control measures besides statistical ones, such as interviewing superiors for the same question answers, observing behavior, as well as working closely with human resource officials in the factories to control input answers and data gathered.

Measuring Human Capital

Before embarking on a detailed explication of the designated indicators of development, notably the content of the measured accumulated human capital, a clarification is owing to Inkeles' motives for embarking on such a course. Finding a way of scientific understanding of human development and the process of human change was

the main trigger for the whole Inkeles et al.'s trajectory; one that followed a long and weighty yet an interesting trail to figure out a social context for development (126).

The set of indicators that served them as measures of attitudes and behaviors, and that constituted their OM scale, builds upon characterizations of a namely modern, mainly developed man. One that would turn out to be an informed active participant citizen, who has a marked sense of personal efficacy, highly independent and autonomous, ready for new experiences, relatively open minded and cognitively flexible.(290) For them also such a civilized citizen would follow formal rules, respect time favors personal planning and respects subordinates. Added to some other qualities, such as inclination towards calculability versus trust, exposure to and attitudes towards Mass Communication, extent of media information, work commitment and technical skill valuation, job satisfaction and industrial valuation, These would in Inkles and Smith's view make up a better inclined person to be part of a holistic development project, in which the human and his human capital are the starting nucleus.

These characterizations of a namely 'transformed to the better' person, were borrowed in this research as well, in order to be able to measure the extent of human capital accumulated for each worker and for each group. The indicators were based on Inkeles' developed themes and sub-themes for the intention to measure the extent by which employees who spent some time working in the factory were transformed to the better, and by how much was this transformation different from one factory to the other in an attempt to uncover a possible best context of such transformation, within the

factory. Other themes were developed in order to complement a newly devised classification of themes, which mainly measured behavior in the factory and personal development including intelligence level.

The Three Indexes

On how to measure our differentials, three separate summary measures were formulated, from some of these same themes and subthemes. These were divided by a regrouping of the themes to form a cultural, a social and a technical index. This classification differed from the one used by Inkeles et al.; where they used only one assemblage of the specified themes that made up their single scale of overall modernity.

While their aim was to find a set of a coherent set of related properties that responded to specific types of exposures, a necessity has arisen in this research to divide the themes in the respective classifications because the researcher felt that each index deserved identification on its own. Although the indexes overlapped in a few themes, they constituted, for me, different domains that lent themselves naturally to some pressing sort of segregation.

In that respect, Banuazizi's positive evaluation of Inkeles et al.'s scale, in terms of its reliability, its internal consistency, as well as the "predictive validity" of its measured modernity levels, is worth noting. Whereas he thought that such measured modernity levels proved the structural psychic unity of mankind- which in turn led to a factual unity in both structure and content- he criticized its inclination to assume some sort of a functional "uni-dimensionality" of the resulting measured levels of its component

elements. His criticism was grounded on the fact that such a multitude of attitudes and behaviors do not necessarily respond to the modernizing influences in a parallel fashion (Banuazizi in: Huntington, Weiner and Almond, 1987, pp. 281-316).

A simple explanation would be that a technically skillful worker does not necessarily have to be neither socially well-rounded nor highly cultured. The same goes for a socially mature and developed worker does not have to be technically skillful or that cultured. A cultured worker as well, might not acquire the social skills of a social bee or be a technical guru. The three dimensions, hence, stage a unique blend of being partly mutual exclusive and partly mutually inclusive; and while such feat might seem confusing as it is, its controversial intricacy has been long forfeited through Inkeles' findings some fifty years ago of the common theme that followed a unified pattern across national boundaries; the OM scale. Whereas themes such as technical skill valuation, understanding production, professional intelligence, work behavior and planning valuation would automatically tally themselves exclusively in the technical index, themes such as a sense of efficacy, job satisfaction/industrial preference and responsibility, time and change valuation would naturally and indisputably find their place in both the technical as well as in the social index. Similarly, just as economic aspiration, openness to new experience, dignity appreciation, professional ambition, calculability and trust, active citizenship, women's right and minority opinion valuation, social fulfillment and readiness for and understanding of social change and stratification fit exclusively in the social human capital index, themes such as openness to new experience, women's right and minority opinion valuation, would be shared in both the social and the cultural index.

Eventually the cultural human capital index would hold exclusive dominance over themes such as Verbal fluency, Consumption attitudes, Growth of opinion, and mass media exposure and attitudes, as well as media information and education valuation and aspiration.

As for the overlap it is noted to occur through the social index; meaning that the cultural and the technical did not overlap, while each one of them shared some themes with the social. That goes back to the fact that the OM scale was originally developed as a social thermometer; and while the social spheres dominates most aspects of a person's life, it is inevitable to disentangle it sometimes from other aspects that originally belong to other spheres. One would remark that some themes had to be added to the original main borrowed Inkeles' themes, in order to complement the integration of the newly constructed technical and cultural indexes. Those were 'workmanship and professional skill', 'intelligence level', which are all behavior indicators.

Here it is worth noting that certain themes being exclusively gathered under one index does not necessarily mean that at heart, they do not overlap in meaning and spirit; something that ascertains the multi-dimensional nature of the concept of human capital on one hand and its variation on the other. In this case however the decision to parcel emerged for matters of simplicity and specification. This came out very handy as it did serve a definite purpose of sorting out the three spheres for matters of recognition through categorization. Table 3.2 shows the different themes along with their categorization.

Table 3.2 Development Indicators and their Respective Themes

Themes	Cultural Human Capital	Social Human Capital	Technical Human Capital
Active Citizenship		*	
Calculability and Trust		*	
Change Valuation		*	*
Consumerism and Consumption Attitudes	*		
Dignity Valuation		*	
Education Valuation and Aspiration	*		
Economic and Occupational Aspiration		*	
Efficacy		*	*
Growth of Opinion	*		
Information	*		
Intelligence Level			*
Job Satisfaction/ Industrial Preference		*	*
Mass Media Attitude and Exposure	*		
Openness to New Experience	*	*	

	Professional Ambition			*					
	Planning Valuation					*			
	Responsibility and Time Valuation			*		*			
	Social Stratification, Understanding, and Fulfillment			*					
	Technical Skill Valuation					*			
	Understanding Production					*			
	Verbal Fluency	*							
	Women's Rights and Minority Opinion Valuation	*		*					
	Workmanship and technical Proficiency					*			

As for scoring purposes, the same method used by Inkeles et al. was followed. This Scoring system came in very handy for the purpose of providing a fairer and easier way to compare the different groups, whether long appointed or fresh recruits, of each factory. The fact that the actual sample sizes came out unequal, unlike what was hoped for when in the beginning, made some kind of scoring much needed for a better representation outcome as for purposes of analysis integrity. Questions -which were used by Inkeles et al to make up the final themes-were again borrowed, of which a large number was discarded; the same as happened with the themes. As some of the proposed themes were discarded because they were outmoded, not applicable or not needed at this point of time, a lot of questions were also not used for reasons of redundancy or because they were superfluous or not anymore functional. The table in Appendix B shows the

classified grouping of questions for each theme. Not all questions used in the questionnaire appear in the table. Some of them were discarded after preliminary pilot interviews and some other were put away according to their answers which either proved them to be redundant or difficult to understand. However all questions, that were asked in the interviews appear in the questionnaire forms in Appendix B.

Screening activities for the most feasible questions took extensive effort and time. First was the nature of each question whether or not it was still viable; if not it was automatically discarded from the very beginning. Whether or not a given question would be culturally suitable; mainly sensitive questions as to religious attitudes, determined its inclusion or exclusion from the questionnaire. Whether or not it could be properly and simply understood, had to deal with the ability of persons with average IQ levels to understand the question in a way that enables them to correctly express their feelings or attitudes towards it. That was again a painstakingly course, while we agreed on several forms to simplify or explain the different questions, we ran the risk of altering or varying its original meaning. The second trial was when the researcher embarked on translating the questions to Classical Arabic and discovered later that they had to be re-translated to colloquial Arabic, in the exact fashion in which it would be used for the aim of comprehension. A third encounter concerning questions had to do with the intended analysis of their outcomes. This issue had to deal with two dilemmas. One of them was about whether or not to close the answer-a simple and easier to analyze yes or no-and the other related to which answers would we consider favorable for matters of later analysis.

Closing answers had to be unfortunately done away with, if the question was too straight forward and would fall into the 'social desirability' trap, so the researcher tried to steer away as much as possible from the agree/disagree type of answers. Answers were variably scaled into 4 possible answers formulated in a way that makes all four of them appealing. This same method was also applied in the smaller scale questions with two choices only. On another plane, the content of the questions was very misleading as to which represented our favorable answer. They were always intentionally designed to appear as if all answers were favorable.

Setting out definitions of the ultimately favorable versus the unfavorable attitude or behavior, was again, a challenging chore. Sometimes, as strictness had to be fulfilled in the course of warranting a clear distinction, the process varied from a question to the other depending on their relative contents. In the Discussion and Findings section, Data which would have been collected, would be tabulated in their relative tables, bearing the preliminary percentage computations, and later their relative tabulated scoring, for the different questions classified under their relative themes, with highlighted choices depicted as the positive answers for each question. The remaining choices would denote a negative component.

For scoring answers -of questions belonging to each theme-, a binary system was adopted, as in Inkeles et al., whereby a decision had to be made for each question which bore the possibility of more than two clear cut answers –of either yes or no- as to where the line should be drawn in order to decide on which side of the line, the favorable -or unfavorable- answer lied. Of course this same decision had to be applied as well on the

simple questions of two choices. That in itself was not considered an easy task, for whatever was decided could be contested on other grounds such as the prevailing system or the dominant specific social tendencies or for specific personality traits of Egyptians in general; a challenge that posed itself earlier before Inkles et al and which have always formed an ever-going unsettled dispute between Anthropologists and Sociologists (p12, 13). Eventually a decision had to be made for each question as to the most contending possible for everyone consulted; (family, friends, department advisor, and a few preliminary interviews of some early respondents). The foregone virtue of precision or exactness had to be sacrificed for the sake of another virtue; simplicity and straightforwardness.

Open ended questions were the most exhausting to both interviewers and respondents. Probes were used in delicate ways in order to avoid the trap of leading or hasting the respondent on one hand against neglecting his inclination to respond upon persistence. A fine balance had to be always watched and maintained, in order not to squander the question between redundancy and evasion. Whereas getting open ended answers was critical for the verbal fluency measure, from the point of view of the respondents, they were the most difficult questions to handle. Interviewers found them to be the most irritating to both as well as the most time-consuming.

As for questions concerning political orientation and political maturity, it was decided to discard those from our analysis in this particular research because a lot of the attitudes were shaped according to the prevailing system, a fact that affected also other

questions such as those concerned with education and work. However, caution was warranted in the manner these questions were introduced, and the political measure was set to be postponed to a later study for reasons of its weighty character and its span which requires a wider and different realm of conditions. Paternalistic orientation indicators were also postponed to another more in depth research opportunity, for reasons of questioning their suitability as accelerators of human capital accumulation and development versus the early authors' opinion that they are mere features of development deference, and that they would in themselves, stall and defer advancement. Paternalistic versus individualistic orientation was also set to be left out at that point of time because they were closely linked to the measure of political orientation, and which the prevailing democratic system would affect more so than any other factor.

Scoring worker skill and workmanship as well as other work-related behaviors, would not have been possible through questioning workers on their own comportment. Therefore a decision was made to devise a supervisor rated index for each worker skill level, ability to learn, sense of responsibility, ability to lead and eventually work commitment. These worker observation sheets provided tools to assess and rate worker skill, intelligence, social ability and other work-related behaviors. As some would convict supervisors' ratings as subjective, other worker-behavior -rating tools were obtained from formal factory records-such as the qualifications/training matrixes- to assist in double checking and in the preparation of worker behavior scales. These factory records provide the most objective measure because different executives from different divisions assist in the final rating before they are endorsed, (Appendix E shows a version of the worker observation sheet).

Chapter 4

EVIDENCE FROM THE FIELD:

THE EMPIRICAL RESEARCH

The Factory as a Context for Development: General Description

The three factories selected as the sample of study were as much as possible benchmarked for their level of physical modernity, such as factory premises, Factory physical size, infrastructure and equipment, perceived number of benefits, as well as safety measures and the quality of their management system, which were all observed and documented as for each of the three factories. These were rechecked again in management interviews for verification purposes, (see Appendix C for a version of management interviews in colloquial Arabic, as well as an English version of the questions).

Other factory attributes tested for their effect on the amount of human capital accumulated by its workers for the length of time spent working in it. Measures such as work environment/psychosocial climate, nature and type of management, nature and type of organizational structure, rated modernity of management practices, managers' attitude, supervisors' traits and attitudes, amount of worker satisfaction, workforce: size, nature (age and background) and composition, workforce quality: skill, education, workmanship and work stability. Since 'most modern', as concluded by Inkeles et al., did not necessarily embrace a more intimate learning experience or a more understanding of the production procedure, modern here does not only designate physical modernity, rather modern practices and management style. Seeing that they have always pressed for micro factory studies with smaller scale samples in order to study factory micro-environments, this research comes in very handy just to serve this intent.

As for management interviews, these had to be scheduled after getting through with worker interviews. It was easier to get hold of scheduled meetings with the different department managers, than it was for workers. One manager, clarified, that the researcher could sit and talk with him all the time that he wished, on condition to leave his workers free for the flow of production and deadline's sake. However, factories' interviews had to be carried out over a period of two to four days for each factory, as multiple departments were involved in the questionnaires, it was not an easy task, assessing interview times, each manager in his own office, in his free time-liberated from regular scheduled meetings or periodic conference calls- whenever he was present on site and not on any external assignment.

In order to ensure research integrity, and as most of the questions/items concerning factory and management ratings needed to be mainly qualitatively, as opposed to only quantitatively assessed, a great deal of observation was warranted in the style of questions asked and the coder probing for verification. Also employing cross interrogation-with the same questions being asked to several different department managers of each factory- served to cross check the validity and verify the real existent spirit and style of management practices. Detailed parameters were used to evaluate work environment and management style, such as the company's philosophy and the inclusion of worker development as a principle ingredient, sound governance and leadership practices, physical and human resource adequacy and development, worker training and self appraisal, work environment, learning and development, work ethics, managers attitudes *vis a vis* workers, the extent of workers' control and last but not least, supervisor's caliber and their disposition (see Appendix D for a list of independent variables as well as management style indicators, each with its respective question-grouping). All three factories are business to business establishments which already have links with, and supply intermediate goods to, reputable industrial buyers. Those customers, recognized auto manufacturers and automotive component manufacturers, be it either a mother company of a TNC, located abroad or a local manufacturing site thereof, made it unnecessary for these three factories to hold marketing or sales departments of their own.

All three factories were contacted on October12th 2009 to introduce the research idea to them and ask their permission to allow conduction of the interviews on their premises. All three asked to see a copy of the proposal before they would grant their consent.

Factory 1: Arctec Inc.

(Management interviews started on February 1st till February 3rd)

The first factory is totally Egyptian owned and managed, with the managing director as a well educated enlightened engineer, with cultured technocratic descent. He relies on close family members to head the top management positions; the factory is run as a large family concern, with close ties with workers and an eye on their personal development, in a thoughtful manner. As its main activity, Arctec Inc. produces, supplies, and maintains climatic control systems for passenger cars and commercial vehicles of internationally recognized brands. While its vision spells out as "to nurture each business unit to independently attract foreign investments and build successful joint ventures", Its mission revolves around is about "offer[ing] the best quality and cost effective products to [their] customers, develop[ping] [their] employees, invest[ing] in them, and continuously improving their working conditions, cooperat[ing] with [their] suppliers and help them improve, creat[ing] value for [their] shareholders, [and last but not least, caring for their community] and add[ing] value to… society". While Arctec Inc.'s vision reflects their need for international recognition and global inclusion through equal partnership, the mission statement taps on a little more than the mere micro level directives needed to achieve that vision. While concern for value and quality provides a natural ingredient for realizing the vision, caring for employee and society's development

is an added extra. Their total workforce amounts to 245managers, engineers, workers, administrative staff, technicians and technical consultants. Of those, 150 are direct shop floor workers; with five higher organizational levels till the highest level of management.

The factory is located in the industrial city of the Tenth of Ramadan, operating now for more than twenty years on a total area of 3,025 m2 out of an overall area of 5,000 m2. Over a three level building, the area totals 6,490 m2. As for their main sales activity, they mainly work through direct contracts with well established customers in the automotive field, as agents of well established Auto companies in Egypt, such as BMW, Nissan, Mercedes Benz and General Motors. Their total sales turnover amounts to twenty seven million dollars, of which, some five percent is being exported; a ratio which they wish later to increase.

The management team in Arctec Inc. values foreign technical assistance and accords it utmost importance. Whereas they are already making use of some foreign assistance with support provided from the industrial modernization center, they still think they need more of the foreign element, as they see positive outcomes when it is present, to the extent that they wish it to become on a permanent basis. As for foreign experts training direct workers on the shop floor or sending workers for training abroad; they are still short of doing that for it is still only available for technical and quality engineers or at best to supervisors.

The most manifest problem as regarding direct operators, revolves around the high rate of turnover; a problem that stands fiercely in the face of the other two factories,

as well. That was a recently-encountered phenomenon, especially from the new-recruits, in Arctec Inc., although work benefits have been, more than once, revised. Furthermore, extra special treatment has been always granted to those who needed it-the managing director is a typical philanthropic-, whether in the form of material incentives, long half paid study leaves, unpaid military halts, paid education or local outside training fees, free housing arrangements for those who come from far off governorates, and special health care arrangements, however high turnover is still an impending dilemma. The HR department is taking measures to try to scaffold a feeling of loyalty to the factory through two underway projects. The first one is called "Twenty Up" for the important twenty irreplaceable employees. The second one is "Ten Up" for those who spent ten years serving in the factory. Both groups would wear a badge for recognition and would be favored and materially rewarded.

Factory 2: Autotex

(Management interviews started on January 31st till February 3rd)

The second factory is a joint venture, jointly owned and managed by Egyptian and Turkish investors; it is a local subsidiary of a large multinational Turkish group. Autotex has always had two Turkish managers in its management team. One is the general manager at the top of its operations organizational chart and the other is the technical manager, whose office is located on the shop floor and to whom report all production, training, and technical personnel. He reports directly to the general manager together with the heads of the units that he foresees. The general manager is an enthusiastic, sharp-witted, and knowledgeable as well as an experienced textile engineer; with a high degree of specialization in his field, which doubled as the subject of higher degree

studies. With a total number of 196 employees, the factory is relatively easily run in a centralized manner that befits the nature of its ownership structure and management arrangement. Again workers feel at home and fit well into the system. Dealing with textile machines gives them a lot of expertise and self confidence as they feel a part of the orchestrating effort going on, on the shop floor. There is a prevalent culture of encouragement for learning and personal development (both on the shop floor and academically), especially for the witty optimistic enthusiasts. Although, in the textile business, most work is machinery-based, the heavy workload substantiates the high level of requisite capabilities needed to physically endure work without any hindering slip-ups, something which would be very costly-time and effort wise- to rectify, if there could be room for such rectification. The Turkish GM appears to be switched on to perform, learning, competitiveness and interested in the development of people working with him in a daring way.

As its main activity, Autotex is specialized in the production of tire cord fabrics as a reinforcing material for both commercial vehicles' as well as for passenger cars' tires. While its vision spells out '[being] the local solution partner for the global rubber industry in the highest possible value added' their mission principles revolve around preserving 'safety, health, and environment', pledging 'integrity', as for personal dealings, business arrangements as well as in respecting the host country's laws and regulations, a focus on 'customer satisfaction' with an eye on 'continuous improvement', 'innovation', 'global collaboration' and 'open minds'. The company's principles reflect their valuation for competitiveness, a pre-disposition stemming from their nature as

working under the umbrella of a global TNC, and soaking the philosophy of global competitiveness for viability. They also confirm their respect for their operating environment, whether business or natural, as well as stress on learning and development. Autotex' total workforce count is 196, of which 153 are direct shop floor operators; with three organizational levels above to link them to top management's level. This vertical organizational structure underscores a centralized management system of the production function; a practical requisite of the functional nature of the subsidiary. However the three layers designate top management's involvement in the production process in a hands-on approach; the GM holds the double title of 'Operations Director'.

The factory is located in the industrial city of the Tenth of Ramadan and was established in 1993, on a total area of 14,000 m2 out of an overall area of 31,000 m2. As for their main marketing and sales activity, they mainly work under the umbrella of "Autotex Global", a leading trusted supplier in the field. Autotex is a supplier of tire cord fabric to recognized industrial customers in the tire business, especially in the Middle East and Africa. Their total yearly sales turnover amounts to twenty four million dollars, of which, 90 percent is being exported. Autotex' shop floor resembles a typical textile plant, with its noisy machinery, twisting of single and double ply and cable threads, weaving and dipping activities-except that it is the only factory in Egypt that manufactures tire cord fabric.

Employees in Autotex do not see Foreign technical assistance as a principal sought after ingredient for the mere fact that the GM and his associate are already

foreign, however they may draw on extra foreign expertise in the area of quality and safety as well as when they establish new manufacturing divisions in the factory, with new machines and new technology. The constant regular communication routines with the company's headquarters and the tight control maintained through its centralized management approach keep communication with foreign expertise always existent, an element they value and consider themselves privileged therefore.

Again as in Arctec Inc., worker turnover at a high rate and the lack of work commitment and worker loyalty pause the most serious problem facing the management team, in Autotex. As in Arctec it is assumed that the not so strong HR departments perceived in all three factories, and, resulting from the lack of need for local factories' own marketing and sales strategies, account for the problem and for the inability to find solutions thereof. As work benefits have been discarded from the formula, being on equal footing with other factories in general, and maybe even a little better than those in Arctec Inc, No exit interviews are conducted same as in the other two factories, to come out with a real cause of the problem. However from worker interviews, it has been determined that the main source of dissatisfaction for workers was low wages. According to the Personnel manager in Autotex, workers are being sucked into the new real estate construction market boom, which pays higher. The issue of low wage levels pause a general crisis that stems from a vicious circle of factories not willing to pay more to workers who lack primary levels of skill and possess no expertise as they start working, and workers getting dissatisfied and frustrated, losing motivation, not performing, and eventually leaving work. The circle gets even wider as factories claim

that they can not compete globally, if they raise worker wages-a central ingredient for their own livelihood. Work benefits, in Autotex, are being revised, with no promise of touching on a resolution. With wages averaging LE900, while in Arctec Inc., they average LE750, and in Exilar Egypt were detected to average LE600.

Factory 3: Exilar Egypt.F4

(Management Interviews started on January20th till January24th)

The third factory is totally foreign owned by a large German multinational company; Exilar Egypt is a hybrid of ExilarAG. Except for the position of the General Manager which is reserved to a European GM, the rest of the management team is all Egyptian.. On entering the shop floor in Exilar Egypt, Factory4, one is struck by the sight and nature of work performed there. A beehive of workers working continuously and actively, side by side, no machines, just boards in front of workers to aid them in producing automotive electrical harness systems, which are hand woven. As its main activity, Exilar produces cable harnesses and complete electrical wiring systems for passenger cars and commercial vehicles of internationally recognized brands. These superior class produced components are tailor-made, on a just-in-time, just-in-sequence basis. While its perceived vision revolves around revering the global partner role- it has assumed in the most responsible, efficient, and competitive way- their spelled out mission statement emphasizes 'lean', in order to keep the balance between satisfied shareholders and happy customers, on one hand, and a devoted and motivated workforce with a careful committed eye on the environment on the other.

Again, competitiveness is perceived as a key element here, as in the Autotex' case. Their total workforce amounts to 335 managers, indirect and direct employees, staff, engineers and workers. Of them, 226 are direct shop floor workers; with three official higher production organizational levels till the Factory manager's level. The Egyptian is of a highest caliber among Exilar Egypt management team, and, reporting directly to the British GM, is at ease dealing on both interfaces, the foreign level both above and overseas, as well as the local levels both parallel and below. Exilar Egypt follows the same pattern of globally centralized management system through an ERP system (Enterprise Resource Planning) for purposes of coordination and control. However, on a local level, our designated factory is one of four factories, each with a different body of production operations management, independent from the others, portraying a local decentralization micro pattern of management. Each factory of the four has its own prime caliber, independent Egyptian factory manager, reporting directly to the British GM and making use of other common functional departments such as the Quality Assurance, Human Resource as well as the Supply Chain. As for Factory 4, the factory under study, the factory manager seems to be a competent leader with excellent communication skills and astute executive abilities. He also appeared to be well received and understood by his own staff, whether functional or operational, a fact that reflected on workers through their superiors.

The factory is located in the Free Industrial Zone in Cairo, founded, twelve years ago, on a total area of 9,700 m2 out of an overall area of 12,500 m2. As for their main sales activity, they mainly work under the umbrella of Exilar AG, and distribute their

products to world renowned, original equipment (OE) or after market (AM) automotive companies worldwide. Factory4's total sales turnover amounts to twelve million dollars, all of them are exports.

The management team in Exilar Egypt values foreign technical assistance but do not necessarily find it invaluable. For they have a lot of it, and because a lot of the administrative and functional staff at Exilar Egypt travel regularly either for training, or for exchanging views over emerging problems, solutions thereof or changes in yearly supply chain and production strategies. The present staff appears to have acquired the spirit of modern operation of the company and therefore could substitute foreign experts in so doing. Although local employees sees them more as a distraction rather than needed assistance, foreign experts could be found all the time on the shop floor or in offices, in the form of auditors, customers, technical assistants, or even visitors. As for foreign experts training direct workers on the shop floor or sending workers for training abroad; There is definitely no need for that, as the training department staff is well equipped, self sufficient and regularly updated with advanced training requisites. Sometimes a few competent shop floor workers themselves are needed to travel to a European subsidiary to rectify an impending problem that had appeared in a large exported stock, to save reshipping expenses.

Again the problem of high turnover becomes the most visible; and whereas work benefits, as well as the wage structure, are being revised, some elements seem to persist, such as an expensive special health care arrangement, that is not well received by

workers for a tentative explanation that it is not owned by them or even by their HR department. Many of the workers did not mention the existence of transportation, as well as special health care services, when asked about other work benefits, and when reminded, they just admitted that those two services were not considered because of their inferior quality. High turnover is still a looming predicament, which the HR department is trying to resolve, taking on a serious task of assessing the issue, through the instigation of exit interviews and implementing a variety of other measures. Until then they are continuing their practice of hiring large numbers to offset the high turnover rate for the short term; a measure that seems costly and unsustainable. As for the inclusion of workers in the production process, it rockets high in Exilar, for the mere fact that the nature of production depends mainly on people, who must read the harness design diagrams on boards to guide them in setting them up and working them up by a special technique that resembles hair-braiding- using wires and cables of every size and kind. They have to work fast and keep vigilant with numbers, directions, and, most importantly, with colors. Worker contribution is therefore an imperative in Exilar, as well as his attention for detail and his observance of quality; a concept, Exilar management has elevated to be owned by workers themselves. Besides quality fines and incentives- there are workers whose job is to test their work mates' products, almost on a one to one basis.

EPS (Exilar Productivity system-imaginary label) is specifically designed for the Exilar group in order to foster efficient, lean, flexible, and creative pattern of productivity. Its emphasis is on fostering teamwork values, collaborative leadership and

responsibility. It is well manifested all over the shop floor, thoroughly applied and quite effective. One ingenious module of EPS, that is unique for Exilar, when compared with the other two factories, is 'CIP' (Continuous Improvement Process) which is concerned with fostering employees' sense of innovation and creativity, including shop floor workers, another one is group target agreements that confirms worker compliance with responsibility and own control directives as an ingredient of worker engagement. This system has transpired in an almost completely autonomous Exilar Egypt, except for in the area of 'Design'; an area yet restricted for the headquarters. Exilar management system thus underscores employee involvement and inclusion- part of the main corporate culture. Although, initial design, strategy, and production and procurement plans are centralized, there is always room for dialogue and discussions.

As for selection and recruitment policies, according the head of training and development in Exilar Egypt, selection procedures are more and more simplified, with a basic IQ test, a simple interview, testing dexterity, shape and color differentiation as well as reading number and alphabet letters, followed by an induction training period that ends up with another test to see the extent of worker comprehension and perception capabilities, a main determinant of the applicant recruitment. He also adds, that a lot of work concerning HR development is underway to fill in the gaps, and revive a function that could have an impact on an organization where 'manufacturing' and 'production' have always represented the core activity. However to him, whereas a lot is demanded from workers, in terms of 'work of the mind', more so than the physical effort, more

interest and attention to their personal development and a closer look at a more rewarding work benefits' package come in very handy.

Here it is worth noting that although entrance procedures are as simple in the other two factories, the nature of induction training and the degree of the difficulty of the post induction tests mounts significantly as we move from Arctec Inc., where no induction tests are performed, to Autotex where a simple color-blindness and number/letter differentiation tests are imperative, ending with Exilar Egypt, where more complicated tests are in place. This aspect is based on the nature of production and the degree of intelligence and capability needed more so than the nature and style of management and ownership structure. The three factories prefer to recruit workers with a secondary or intermediate technical/industrial background education, and do not insist on prior experience as a condition; a resulting outcome of the existent dire shortage in, industrial workers- both willing and able.

Due to the large number of workers employed in Exilar, regular monitoring of worker performance is a necessary routine; especially that the type of product calls for heavy reliance on the human element. Tools such as 'qualification/training matrixes' are extremely counted on for matters of appraisal purposes, HR development and placement objectives. Although matrixes are also used in Arctec Inc. they are not accorded similar importance, for the human element there comes next to machinery, besides the number of direct operators is 150, a lot less than in Exilar Egypt, F4, 226.

Moreover, while in Exilar Egypt, same as in Autotex, the emphasis rests on Shift-leaders (direct supervisors) to manage, influence, and get feed back from workers, regarding production and other organizational, collective, and personal issues, in Arctec Inc. more reliance, for production, have been witnessed to rest more, on production engineers. Moreover, it has been witnessed that production engineers take the place of technical trainers, in the first two factories, while in Exilar, training is a separate functional job, different from the engineering function; even though trainers are qualified engineers.

Two important factory observations concern both labor organization and supervisory functions. As for labor, there was no sign of organized worker activities with regards to unionization or syndication. If there was, it might have existed outside the private realms of the specific researched factories, both workers and supervisors denied their knowledge of, or their involvement of any. They asserted that within the private sector there was no place for organized labor. As they stressed the fact that, as regards honoring worker rights and work conditions, private sector factories, did not need coaxing or policing, and that they were watching rules and regulations, especially those pertaining to labor law and safety measures. Their only disagreement hovered over the general wage level, which was way higher than the minimum stipulated by the government, and about the nature of work-rather than work conditions- which, according to them, are quite exhausting, both mentally as much as physically- a measure that usually relates to the individual's own qualifications, pre-disposition, and capabilities.

As regards supervisory activities, the relationship between direct supervisors and their workers in the three factories was closely observed. Since supervisors represent the direct interface between workers and management as concerns differentials of human relations, on how workers face up to management, and in portraying the technical rational aspect of management's interest in worker's development, they constituted a central variable in this research. As their existence and their effected role are of utmost importance to the three factories' managements, they were witnessed to have accorded special attention to picking up their direct supervisors. Factory managements considered that supervisors would have the added abilities to convey messages, through communicating different managements' propositions to workers in their own familiar way. As in direct interaction, in a more personal and compassionate level, supervisors were the best; especially that they had the same background as their workers. The only difference is that they were a little older, and a more long-appointed, and thus more experienced in matters of work as well as in communication. Whichever side they leaned more on depended on their balance of loyalty to the work place on one hand, and their compassion to their workers on the other. That fact depended on their personally formulated capabilities to master both roles. Because of their central effective importance in shaping the amount and the substance of worker development, one of the significantly considered indicators would be supervisors' caliber. As a component predictor of development, Supervisors' caliber would be measured through the resulting scores of the same worker tests and questionnaires; which a sample of three supervisors had to undergo. Coupled with their background information, these measures would shed

light on their pre-disposition to lead, communicate and more importantly on their general supervisory quality.

In Exilar, the relationship between supervisors and workers could well be described as friendly and warm, with an air of encouragement and motivation, strictness was not much spotted, as they might resign some of their own their own for the workload's spelled strictness; where the nature of work compels them-workers, team leaders and supervisors- to be always under pressure. In Arctec-auto, on the other hand an air of strictness from the part of supervisors is sensed. Where no team leaders are in sighted, the load falls on supervisors and engineers to direct the operators. Each one keeps to his machine, doing his share of work in a more or less quiet mood, reinforced by an age difference between supervisors and workers that imposes respect and distance. Moving to Autotex, the noise of the weaving and twisting/threading machines, leaves little place for interaction between the workers and their supervisors, as well as among the workers themselves. However an air of understanding and compassion is detected flowing from supervisors towards their workers. A sense of silent guiding comradeship, that befits the age difference is worthy of recognition.

As for the observed work environment in general, in Exilar Egypt, the shop floor displayed a lively spirit of team work, motivation and concentration coupled with agility. The sort of work performed, has to be accomplished in groups; a concept urged by Exilar's corporate management directives. There were the carousels, a perfect demonstration of group work in action. Where boards rotate periodically-minute

intervals-on metal rails, from one worker to the following each performing his succeeding task, a pattern that corresponds to the just-in-sequence corporate production pattern, where each harness should travel to arrive in the right time to grasp its timed position on the production line in the automobile factory, where it would be there for the timely installation in its place, in its designated particular vehicle. The carousel system is nothing like the Fordist assembly line approach, where the speed of the carousel goes, mainly, at a much slower speed, dedicated to the large complete wiring harnesses, which require quite a complex set of work tasks, difficult to achieve by only one worker, and would be best achieved and its quality controlled, and rechecked, through a multitude of workers sharing the different consecutive tasks each at its own designated time. The original speed of the carousel is negotiated and concluded in the beginning, of each day's projected load and type of harness, and could vary during the day according to operators' feedback or on demand for valid and visible reasons. Coupled with, the former conditions, there exists an occupation on the shop floor, of the relief, who on demand at any time hurried to offer his help if any of his operators on the carousel or on an independent board is facing any kind of challenge in time or task-related. The relief is always there to help on call, so that the work flow is more or less smooth and free from defects, and that operators are confident to benefit from a work environment that conveys support and group spirit.

In Autotex, a ground for learning and attention to detail is warranted by the workers having free time in their hand while the big machines are doing most of the work's share. Workers develop their sense of observant agility and taking precautions to

avoid possible mistakes which in their field could be both beyond repair both for the product and for them personally(defects and accidents). Team work, although not press for, is a natural outcome of worker duos or trios having to tend to one big machine. Hence, group interaction and leadership skills are learned on the job, with natural group leaders emerging and fixing themselves a privileged position as speakers for their teams. This team-work flowing naturally and defining itself as one commended imperative of working in textile, is commended by the management and is found to be invaluable in assuring an interrupted, reliable, and secure work flow. Heavy physical ability is spotted to be a basic a requisite in their normal work tasks, with several separate periods of rest, where the machines are taking the heavy load, together with an interest to learn, especially for the more engaged workers.

In Arctec Inc, unlike in Exilar, the abundant presence of the middle and top level managers on the shop floor is distinguished. Workers are acquainted with the family members making up the top management/owners, looking up to the role model and wishing themselves more or less something that resembles such providence, as a future aspiration. However an air of distance is still sensed as between both panels-management and workers- not much aided by a quite a serious and reserved supervisory body. As machines are doing much the same heavier load of metal work-presses, drills and metal cutting machines, there is little place for more learning after a worker has mastered work on his own machine, except to move on to another machine, designating another area to repeat the sequence. Workers tend to be absorbed, each in his own monotonous operating motion set of his own machine. There is no room for interaction, as there is

little need to do so, except when there is some kind of a defect, detected in the work flow; otherwise each keeps to himself, in a quiet concentrated mode. The nature of work in Arctec Inc. requires a mix of physical ability together with an amount of concentration and specificity in dealing with the machines and responding to work order sheets.

Human Capital Differentials and the Questionnaires

When the researcher first started translating the questionnaire, into Arabic, it gave her a chance to deepen the researcher's insight of the real meaning of where the different questions dug deeply within each person's self; a genuine feeling of how the questions tapped differently on all facets of the person's personality and life dispositions. The researcher had to resist, therefore, the temptation to reiterate the exercise by which the personality themes had to be classified into three indexes. The workings of behavior, knowledge, skills, and attitudes called for another more in depth categorization of the tested themes. However, by doing that she would have drifted so far from the original works by Inkeles et al. where they had a point, wanting to test the syndrome of human capital as a whole, and not the separate themes.

Percentages of workers, each settling on a different response were computed; and then later, when the line was drawn- between which constituted the favorable and which the unfavorable answer-for the aim of binary scoring, percentages were combined, re-scored and then represented in a more concise fashion- in order to facilitate the task of comparison. The favored responses, as decided when drawing the line, were scored as a

2, while the unfavorable ones were scored as a one. Then the scores were added for all questions of one theme, averaged on the number of questions answered and then their median recorded for each group, as a score scale from zero to 100. This practice was used by Inkeles et al. in their original study. The use of such method, factor analysis would treat all individual item questions as equal by weighting them equally for the final item's score. Then comparability would be applied within the factory samples themselves (between the long-time employed group and the new recruits group), then across the different factories comparing the resulting differential achieved in each factory.

As for the means of measuring worker workmanship, we had to consult with direct supervisors about their own workers' skill level, social and leadership abilities, work commitment, and ability to learn, these would help us identify items such as worker technical skill level, their intelligence level-together with the arithmetic test-. Used concurrently with factory records-such as qualification or training matrixes-, they would more precisely consign a more or less accurate measurement of worker skill level and his workmanship. Concomitant to supervisor rating a coder/researcher rating was attempted for the different workers in the different factories, but these were discarded by the time of data analysis, for the lack of capabilities to judging expertise in different skills that the researcher did not possess any means of. Furthermore, it was concluded that one cannot judge a worker skill level by watching him work for a small interval, whereas, a worker's own supervisor offered the best means to judge him from his knowledge of the former over all his working-life in the designated factory. Eventually, Out of the questionnaire

most questions were actually made use of, for item and theme measurements. Background questions would serve as independent variables for testing their effect on worker development, and other questions that served as double checking for verification of managers' answers in the management questionnaire were also functional

Although themes and their relative questions were originally borrowed from Inkeles et al., they were not automatically and blindly appropriated in this research. Rather, some thought had to be exerted in the rationalization of each question and the meaning thereof, in our modern days. This exercise was then followed by renewed decisions on whether or not to group these questions under the same themes as Inkeles et al. had previously resolved. Correspondingly, in trying to draw the line in each question, regarding which of the answers would constitute a measure of favorability-meaning human capital accumulation or development-, some controversies re-surfaced, as to differences in judgments on what constituted a sign of development. Occasionally such issues were settled differently and sometimes similarly but in a different disposition from what Inkeles et al. had previously established. For example, under the theme of calculability and trust, question CA_6, "being cautious with trusting strangers", was finally set to be rather a developed feature than a lagging one; while in questionCO_9a, the more developed worker was not set to "believe in consumption as the most sought out virtue". As for question AS_11a, it was decided to leave it as a part of the 'Economic and Occupational Aspiration' theme, rather than place it in the 'Job Satisfaction/Industrial Preference' theme. Additionally, some items were split in two each with its own different set of questions; such as the newly devised item of

'Professional Ambition' which was separated from the item of 'Economic and Occupational Aspirations'; yet, both items belonged to the Social index.

The Questionnaires

Worker questionnaires were each dated, and marked, with worker names, their factory codes, and their mobile phone number. They start with worker background information questions, age, marital status, education and among other things factory work experience in their current as well as in other prior factories. Subsequently, questions pertaining to the different themes, follow; however in a different sequence than the original question-grouping pertaining to each theme. This practice was purposefully taken up in order to avoid any of the response bias sets previously discussed. However it was done in a careful way not to scatter questions in an unruly way lest it would distract respondents away from the focus and sense of direction; a needed state of mind that helps in keeping logically bound threads of thought, when answering questions, with minimum effort and time. The following table represents the preliminary response tabulations and the first round of the relative percentage calculations for each sampled group. Worth noting, that Questions' abbreviations-such as AC_1 and NE_5- were kept as originally designated by Inkeles et al., for the sake of simplicity.

These tables depict the long-time-employed (here old) and the new-recruits (here new) and their different preferred attitudes and behaviors reflected in their different responses to the different individual questions. Each table represents a human development indicator theme. The grouping of themes into the three designated human

capital indexes would follow after computation of median scores for the different groups. The shaded answers in table 4.1 represented the favorable answers upon which scoring was later on, based, for the aim of comparing differentials.

To highlight the way responses were digested, and analyzed, in the preliminary percentage tables, from looking at table 4.1, is scrutinized.

Active Citizenship

Table 4.1 Active Citizenship

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Belonging to orgs/association/ club(AC-1, 201)	0.0	20.0	25.0	0.0	5.1	22.2	8.3	14.6
Total	9	10	12	13	39	18	60	41
Number of associations (AC-2 , 202)								
1	0.0	100.0	100.0	0.0	0.0	100.0	60.0	100.0
2	0.0	0.0	0.0	0.0	100.0	0.0	40.0	0.0
Total	0	2	3	0	2	4	5	6
Talking or writing to some government official or political leader (AC-4a, 205)	11.1	20.0	25.0	7.7	12.8	16.7	15.0	14.6
Total	9	10	12	13	39	18	60	41
The issue (AC-4b,206)								
Yes Free-willingly	0.0	0.0	50.0	0.0	0.0	0.0	20.0	0.0
No	100.0	0.0	50.0	0.0	100.0	100.0	80.0	100.0
Total	1	0	2	0	2	1	5	1

Voting during the last 10 years (AC-5, 207)	77.8	20.0	58.3	53.8	10.3	44.4	30.0	41.5
Total	9	10	12	13	39	18	60	41
Number of voting times (208)								
1	42.9	0.0	42.9	57.1	75.0	62.5	50.0	52.9
2	28.6	100.0	28.6	42.9	25.0	12.5	27.8	35.3
3+	28.6	0.0	28.6	0.0	0.0	25	22.2	11.8
Total	7	2	7	7	4	8	18	17
Concern regarding some public issue or a law (AC-6, 210)								
Frequently	0.0	10.0	25.0	7.7	15.4	16.7	15.0	12.2
Few times	44.4	50.0	50.0	30.8	38.5	50.0	41.7	43.9
Never	55.6	40.0	25.0	61.5	46.2	33.3	43.3	43.9
Total	9	10	12	13	39	18	60	41

Upon answering questions **AC_1** and **AC_2**, none of the Arctec Inc. long-term-appointed (for simplicity, would be called the 'old' sample) belonged to organizations, clubs, or associations, while only 20% of the newly-recruited-workers (here 'new') did belong to one such association. In Autotex, only 25% of the old sample belonged to only one such organization, while none of the 'new' had joined any. In Exilar Egypt, almost 5 % of the old had joined two associations while 22% out of the new had joined one.

=The tactic here would be, that 'belonging to organizations' (the gray scaled/shaded option) whatever their number, would be counted as the favorable attitude and, and so it would be assigned a score of 2.

As for **AC_4 a and b**, only 11% of the old sample in Arctec Inc., had, at their free- will, talked to or written to some government official or political leader, while 20 percent of their new counterpart were obliged to do so, urged by some civil matters. In Autotex, 25 % of the old did talk or write to officials with half of them doing it out of their free will and the other half doing it on urged grounds; while only 7.7% of the new sample did so. In Exilar , 12.8 % of the old did talk or write to an official, and 16.7 % did so with none of them doing it free willingly.

=The tactic here would be that 'whoever had talked or written to a government official', and had done it 'free willingly', would be assigned a score of 2, for choosing the favorable response.

In question **AC_5**, 77.8% of the old sample in factory 1, voted during the last 10 years, with 57% of those voting more than once, as compared to 20% of the new who voted more than once. In factory 2, 58% of the old voted with 60% of them doing it more than once, while comparably out of the 54% of the new who voted, only 43% did it more than once. In factory 3, while only 25% of the 10% who voted, did so more than once in the old group, 38% out of the 44% who voted did it, more than once, in the new group.

= The tactic here is that 'whoever voted more than once for the past ten years, would be assigned the favorable score, otherwise a score of one for non conformity with the indicator.

On answering **AC_6**, while 44.4% of the old in Arctec Inc. got concerned regarding some public issue at least a few times, 60% of the new did so. In factory2, whereas 75% of the old did so, only 38% of the new group got concerned. In factory 3, while 54% of the old got concerned, 67% did so out of the new recruits.

= the tactic, here would be that whoever had concerned himself at least a few times regarding some public issue had picked the favorable response, deserving a score of 2, rather than the others who did not, and who would settle for a 1.

The rest of the preliminary tables for all themes appear in Appendix H, with an account of how the criteria of scoring for each theme and its relative questions, were set- for both the old and the new sample groups. As for the binary scored as well as the scale scored tables of the same worker samples for the three segregated human capital indexes- cultural, social, and technical-, Appendix I, displays the full assignment.

A well noted phenomenon as these tables were processed is that the difference between the old group samples and the new was striking in an interesting fashion. As every theme and every index was completed, their was more and more affirmation that after more than four decades, Inkeles et al.'s proven hypothesis still firmly holds. The old (meaning long-time-employed) had beaten the new in almost every question, before they have beaten them in nearly every theme and eventually in every human capital index. Variations in the differentials between factories were imminent before they would later be processed for the purpose of analysis. Both score differentials at this stage were already outstanding, when we take into consideration Inkeles et al.'s continuous reminder

that differentials of two or more scores along the final scale upon which differential calculations were based, are quite significant. The scale being one from 0 to 100 differs from a regular percentage score, where each score along that scale would equal according to Inkeles et al., 2.5 % of a regular percentage allocation, thus a difference of about six scores on Inkeles's borrowed scale, would equal a difference of 15% which could by no means insignificant.

The focus of this study 'human capital accumulation' should not be confused with Vidal's 'Worker Empowerment' (Vidal, 2007). While the emphasis, here, is on some kind of holistic development that comes about; either casually or intentionally, in the course of factory work, empowerment, however, in Vidal's view, is the kind of induced development, an enabling tool and a capacity building endeavor, seeking to let workers make decisions, take control, and eventually, get involved in problem-solving as well as in planning activities purporting to the implementation of strategic changes that tap on every aspect of their factory life. Vidal's empowerment is an intentionally planned management practice for the end purpose of befitting the new lean model, and of becoming a world class organization; as regards the revamping of the organizational social order in the company. In general, empowerment is a sought-out virtue because it leads to personal development, which in turn has an effect of further deepening such empowerment. Empowerment in that case is a component of holistic development, nonetheless welcomed and appreciated; one that cannot be isolated either as an influencing factor or as a dependent variable, through an instrumental systemic approach. In Vidal's case, comparing six factories in the US, he denotes his 'organizational political

economy theory' as a main factor in the implementation of empowerment through the adoption of the lean model directives (ibid, 204). A theory that involves management technical rational orientation, organized worker activity, and last but not least the readiness of worker to absorb these empowerment prerogatives.

In the research at hand all three factories represent non-union shops, we are left with the two ends other ends management and workers. However, in the absence of a union the problem of high turnover poses itself vigorously, where no worker organization mediates management's motives on one hand and worker level of satisfaction on the other. A substitute for this missed union function is the direct supervisor. As for Vidal, similar to the findings, the supervisor, or the foreman as he calls him, assumes the function of union. Sometimes he is short of handling worker reticence or resistance of such empowerment measures. Moreover, workers are always cautious and suspicious of about supervisors are the management's watchdogs, or at best their tools to achieve productivity goals. Thence, they can hardly have been depended upon for their complete support of any attempted organizational changes on the factory's shop floor, especially in the absence of wage and incentive satisfaction. Additionally, while "inherent tensions remain…regarding contradictions between standardization and participation" (ibid, 205), these tensions are purported to their relationship with supervisors, who, in their view, by being the "main channel for employee input", control matters in their hands and prevent them from directly interacting and communicating with the management (ibid, 211). Furthermore, Vidal confirms that, as far as workers are concerned, supervisors and team leaders are 'favorites' that help the management implement their strategies; a matter that

could "generate ill-will among neglected workers [and which compounds the issue of] limiting the breadth of empowerment" (ibid, 219).

As Vidal stresses that induced worker empowerment is "limited in depth and in breadth" (ibid, p. 199), a consideration of the larger view of accumulated human capital in general, including empowerment, would come in handy. A closer look at the three factories under scrutiny would prove that although the two mother companies of Autotex and Exilar Egypt have long achieved directives on being world class organizations, they are not implementing the same philosophies locally. At best one could detect some nominal empowerment which Vidal terms consultative participation rather than the worldly substantive concept. To him nominal, consultative denotes "new responsibilities without authority to alter organizational routines [as well as] the ability to give input but not make decisions" (ibid, p. 202, 203)

Talking with one of the foreign factory managers to introduce research objectives, he was rebuffing the idea of foreign companies coming to Egypt in order to develop the Egyptian worker. An actuality that could not be denied, in the real global industrial world, TNCs and their plant managers are more inclined to achieve productivity targets in a lean enough way to increase their productivity. With a level of target achievement and satisfaction that is not necessarily coupled with optimization for most managers, their mission is not to invest in a specific host country in order to empower or develop its workforce. Their decision is chiefly built on economic grounds rather than even on the political economic. Nevertheless, the talk about Corporate Social

Responsibility would rebuff this logic, if only it was not out of the scope of this research. Moreover, in that particular case, it would take the issue to higher level, tackling a totally new concept of global corporate social responsibility; as regards TNCs in host countries. Other considerations would then erupt and have a direct effect on such organizations' decision structure, as to whether or not to go out in the first place, compounded with a heavy weight of added constraints. Not only does this stance explain the lack of interest and the reluctance to be researched except for the totally Egyptian-owned factory, it also contributes an addition to the technical rational pre-disposition of foreign companies investing overseas. As for Vidal, "frontline workers' time is considered wasted if not directly doing physical work" (ibid, 211); a fact that was experienced empirically throughout the field work, and an intricacy that was encountered in real life while conducting interviews in all three factories.

Independent Variables/ Predictors of Development

Again, following in the footsteps of Inkeles et al. and their recommendations in which factors would cause the development of workers in the three designated spheres; culturally, socially, and technically, and as what might explain the differentials in the human capital, workers had accumulated in these three domains, it would be suitable to start talking about indicators of development, or better explained in our case where we are measuring differentials, they would be better described as accelerators of accumulation.

Considering the complex and multi-faceted nature of factory work, and its relationship with the workers' development, it would be imperative to study not only the

effect of each influencing variable, but to examine, as well, the interaction of such factory measures together. Composite factory and management summary measures thus came into play in order to achieve this target. The purpose was to rate all the different variables, such as the managers' attitudes, worker control, workforce quality, and test them alone, then in pairs, or even more to study their collective effect. By rating managers' attitudes, we measured, as recommended by Inkeles et al., how valuable workers' initiatives would be as a contribution to production increase, how valuable it would be to inform workers ahead of time as of changes in the previously planned flow of production, and how much should managers consider workers feelings.

As for worker control, while for all three factories management control tools such as time and motion studies were not emphasized, formal production controls took form in the deadlines with daily, weekly, and monthly production targets, which are similar in their harshness in the three factories depending on the time of year, economic conditions, and on the line of production, as well as the raw material supply flow. The extent of worker contribution in formal production also contributed to the factors worth consideration, as well as their remoteness from higher management levels in the company's organizational structure; as indicated by the hierarchical nature of the production organizational chart. Work environment and the caliber and disposition of supervisors are also important indicators that would never be overlooked. An additional factor, but that should definitely be considered is the nature and background of the workforce itself, their age, skill, experience, as well as their origin and their urban experience (see Appendix D for detailed sets of independent variables and their relative questions).

Responses for Factory and Management indicators were obtained from the Management questionnaires, except for the indicators concerning workers' life cycle, occupational characteristics, workforce quality, and supervisors' caliber, which were mainly begotten from the worker and supervisor questionnaires' background questions and tests. First the indicators were checked for existence and implementation in each factory, which provided an easy ground for scoring again in the binary fashion (Appendix G). Questions which were more detailed were scored according to criteria set beforehand as to what constitutes a modern, pro-active, nurturing, empowering attitude of managers and what constitutes world class level of institutional practice and infrastructure. The next step was to score the factories for the same indicators. The gray-scaled indicators in the preliminary checked management tables were the favorable condition deserving a score of 2 for the factory as the responding unit; otherwise it would be assigned a score of 1(see Appendix K).

In general, indicators which were found to match in all three factories, or to lack in all three, were discarded from further processing of the Management indicators' tables and background information. For example, Education was a constant common variable to the whole sample as a preliminary determining criterion, Urbanism was also discarded, in the final analysis because of the finding that all workers in The foreign factory were mainly born and raised and still living in Cairo, while the two other worker groups were mostly rural residents of villages or townships in Al Sharkiyyah, an Egyptian governorate that again does not match Cairo's urban level. Some of the management indicators were also discarded for their redundancy cross the three factories such as the Quality system measures. Work benefits were also discarded for being more or less equal, in scope and value. These variables were

rather qualitatively. As for the final and total scoring of independent variables, they were computed as for the dependent, by totaling the binary scores, averaging them on the total measures to get again a total score on a scale from 0 to 100.

Most indicators were scrutinized in detail and each break-down scored and taken account of for differential scoring of such independent variables. Resulting scores of the determined selected indicators, whether management or worker background, were then used in the regression model that followed. Regression was performed for the objective of determining which of the selected predictors had a significant influence and which did not. Then a correlation model would be applied to relate the regression results with the worker human capital accumulation results.

Findings and Discussion

Before embarking on Regression, all kinds of total score sums were calculated for both the dependent and independent variables over the old and new sample groups as well as for the three supervisors' sample. Aggregates and differentials were computed, both for the three indexes as well as for the total of all the human capital themes. These were also processed for management indicators and some background information. All such these result are displayed in the Appendixes listed below, each with individual scores as well as their total sums, as follows:

- Appendix J: Cultural, Social, Technical and All Theme Human Capital Differentials
- Appendix K: Factory Management Indicator Scoring
- Appendix L: Age Distribution

- Appendix N: Scores of Indicators 1 and 3 (Life Cycle Stage and General Managerial Dispositions)

Moreover, table 4.2 shows an aggregate ranking according to a summary of all results of these tables along with showing the ranking of the three factories as well as the selected and used independent according to their significance or best according to their performance or significance each in its own standing in its relative domain.

Table 4.2 Human Capital differential(Cultural/Social/Technical/Total)

Appendix J	Highest Rank	Medium Rank	Lowest Rank
Technical Human Capital Differential	Arctec Inc. 3	Exilar Egypt 0.96	Autotex -1
Cultural Human Capital Differential	Arctec Inc. 2.75	Exilar Egypt 1.05	Autotex -2.9
Social Human Capital Differential	Arctec Inc. 11.34	Autotex 4.88	Exilar Egypt 3.68
Total Human Capital Differential	Arctec Inc. 3.8	Exilar Egypt 1.84	Autotex -0.1

As for the differential between the old and the new in the accumulated stock of technical human capital, Arctec Inc. prevailed over the two other factories, with at least a three point difference, a difference that is perceived as quite considerable; over the forwarded 0-100 human capital scale. While Exilar led by 1.96 point that left Autotex with a negative score of -0.1, thus occupying the lowest rank in the technical arena.

As for the cultural human capital group differentials, Arctec Inc beats the two factories with a difference of 1.7 over Exilar and leaving Autotex with a negative correlation in the cultural field of -2.9.

The social index was the most demonstrative of relatively large differentials between the old groups and the new recruits. Arctec Inc., again, had the largest as well as the highest among the three factories, beating Autotex, which this time achieved a positive standing of 4.88, however still lower than that of Arctec Inc. by 6.46 differential points. Exilar's ranking retreated leaving second rank in the social rank this time to Autotex.

Thus Arctec Inc. won the highest ranking in effecting an overall personal development of employees who spend some time working in the factory, as opposed to Exilar who occupies a medium ranking in effecting such a change, while Autotex appears to have been losing that effect except on the social field where it switches places, but again, with a not so big scored differential.

When aggregating the differentials, of the three indexes, Arctec naturally comes in first, with a 2.0 differential score; while Autotex comes in last with a 2.8 differential scores less than Exilar who comes in second and a 4.8 less than Arctec Inc.

These results came to confirm the research hypothesis that an effected human capital accumulation in all three domains, the technical, the cultural, and the social need not be only confined to the foreign more modern and advanced factory infrastructure or management system. This outcome was well received, for the reason that, all through the field research, doubt was mounting that the totally owned factory would normally capitulate the most effect, followed by Autotex, especially where their management quality systems and practices were closely monitored from the headquarters, to orchestrate a more or less similar culture to the

world class standing of the mother organization. As much as these results come in as strikingly and enlightening, they were confirmed more than forty years ago by Inkeles et al. who stressed that factory modernity did not necessarily correlate with worker modernity.

And as one could easily resolve that Arctec Inc.'s factory managerial as well as its physical infrastructure was by no means, of an absolute mediocre level, when it is compared to the other extreme of ownership structure, Exilar, it was of an easily perceptible lower status. Arctec Inc., on the other hand measured up simultaneously with Autotex, the joint venture factory, as for the management's indicators standing (table 4.3). Holding a medium ranking, for that instance; one that is not so far off from the top ranked Exilar in almost all of the factory and management style indicators. That detail, particularly quite visible in the managerial disposition measure which tested managers' attitudes, extent of worker control, their effected work environment as well as their mission and vision's pre-disposition as regards the development of the human resource element. That came out as a comforting factor, that a disparity between Arctec Inc. and Exilar Egypt, of three differential points less was not as striking as that of seven points variance, as between Autotex and Exilar, on that account.

Table 4.3 Factory Management Indicator Scoring

Appendix K	Highest	Medium	Lowest
Leadership and Governance Indicators	Exilar Egypt 46	Autotex 37	Arctec Inc. 31
Resource Indicator (Physical and Human)	Exilar Egypt 28	Arctec Inc. 21	Autotex 19
Managerial Disposition Composite Summary Measure	Exilar Egypt 26	Autotex 23	Arctec Inc. 19

As displayed in tables 4.4 and 4.5, differentials of other independent indicators such as work force quality, personal and family characteristics (life cycle stage), and supervisors' caliber, while Exilar held its first standing, Arctec Inc. rivaled Autotex on the subsequent standing.

Table 4.4 Other Independent Predictors

Appendix	Highest Rank	Medium Rank	Lowest Rank
Work Force Quality Measure	Exilar Egypt 12.8	Arctec Inc. 12	Autotex 11.3
Personal and Family Characteristics Total Scale Scores	Exilar Egypt 61.2	Autotex and Arctec Inc. 59.3 and 59.3	_____
Supervisors' Caliber	Autotex 78	Arctec Inc. 68	Exilar Egypt 66.3

In table 4.5, below, the differential between the old and the newly employed groups as regards their relative life cycle stage (comprising age, marital status and number of children) were not that sizeable in Arctec Inc.; of only four points differential as compared to Autotex's 22.1 differential. While the zero differential in Exilar would very much explain the high turnover rate especially among the old recruits as well. Other factors could be contributing to the vast variations in these differentials, such as the mostly rural origin of Autotex workers as compared to the urban characteristics of the Exilar sample, which could account for a more mature workforce, predisposed to more commitment, loyalty to the workplace, settling early for a not so costly marriage and family making.

Other factors could account for this condition would be that the urban worker is generally more ambitious than the rural because he is more exposed socially and culturally to the prevalent outstanding factors most influenced by urbanism as opposed to ruralism, such as mass media Exposure, economic and occupational aspiration, economic level, consumerism and consumption patterns. Nevertheless urbanism, mass media and economic level were intentionally left out in this research, not because they were less significant, or out of the scope, rather because it would compound the effort and time requisites to so doing, extending beyond the scope and limits of the present research time and effort to embark on more extensive, though well related, undertakings.

More reasons could lie in the different selection for recruitment informal policies that are not spelled out but affect the nature of the workforce, in a particular institution. Many HR managers prefer to recruit those who are naturally older, already settled and or have children for the purpose of minimizing turnover, when the worker has responsibilities that would prevent him from making hasty desertion decisions. Young single workers would be freer to often switch workplaces (see also Appendix L for an account of age distribution patterns between the old and new recruits in the three factories).

Table 4.5 Differentials of Scaled Scores of Life Cycle Stage

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Personal and Family Characteristics (Life cycle stage)	63.0	58.3	70.8	48.7	61.2	61.2	63.3	56.5
Differentials	4.7		22.1		0			

Regression Models and Correlations

As for the regression model, $\mathbf{y = \alpha + \beta x}$, it was applied using the six selected independent variables to test for significance of variation (see Appendix D for a detailed description of tentative and used independent variables, and their relative break down). The first one is Personal and family characteristics, or life cycle stage, which is a composite summary comprising age, marital status and number of children of respondents. The second is occupational characteristics, or individual factory experience; a combination of a worker's total months of factory experience, the number of factories he worked in, [new factory worker/ experienced]. While the first two variables related to

the worker background, the subsequent four refer to factory and management feature indicators. The third variable, thus, refers to general managerial disposition; which is a composite summary measure of the company's score results in vision and mission, managers' attitude, worker control, and work environment indicators, the fourth would be factory modernity; a composite of both indicators of Leadership and Governance Indicators Physical and Human Resource Indicators), the fifth being workforce quality, comprising age, skill, as dictated by a composite summary of factory records and supervisor's evaluation, as well as supervisor's caliber as computed from supervisor's questionnaires as well as their arithmetic test results.

The Xs would then be summarized as follows:

Life cycle stage (Indicator1)

Worker occupational characteristics (Indicator2)

General managerial disposition (Indicator3)

Factory Modernity (Indicator4)

Workforce Quality (Indicator5)

Supervisors' Quality (Indicator6)

Three models were applied in order to investigate the extent to which the six independent variables Xs accounted for the variance in the total differentials of development between the old and new workers, in each human capital domain. One was applied to test for the cultural variance, another for the social variance, and the third one

for the technical variance. In all three models, the independent variables, factory modernity (4) and workforce quality (5) were excluded because of co-linearity. As for workforce quality, it was tested through the first two variables pertaining to worker background. The other variable was already confirmed a long time ago, by Inkeles et al., not to have any association with human capital effected variance, among factory workers. It was thence satisfactory to settle for the remaining four variables, for association results. Appendix M shows the different regression models that were applied as well as the correlations exercise.

Model 1 "Cultural Variance"

In the first model, with Y being cultural variance, it was deduced that 52.8 % of the variance in cultural human capital accumulation would be described in terms of the three remaining independent variables; worker life cycle stage (1), his occupational characteristics (2), managerial disposition (3), and supervisor's quality (6).

Results from the ANOVA table confirm that with 0.000a significance level, the model was significant. The coefficients' table shows that the most significant indicator was life cycle stage (1), 0.000, significance, accounting for the cultural variance; while indicator (3), managerial disposition was likely significant, with .065. The other two indicators, worker occupational characteristics and supervisor's caliber were not significant and did not account for the cultural variations or differentials.

Model 2 "Social Variance"

In the second model, with Y being social variance of workers, it was deduced that 21.0 % of the variance in social human capital accumulation would be described in terms of the three remaining independent variables; worker life cycle stage (1), his occupational characteristics (2), managerial disposition (3), and supervisor's quality (6).

Results from the ANOVA table confirm that with 0.000a significance level, the social model was significant. The coefficients' table shows that the only significant indicator was life cycle stage (1), 0.000a significance, while all other indicators- independent variables- were not significant, thus, did not account the social variations or differentials between workers and worker groups.

Model 3 "Technical Variance"

In the Third model, with Y being technical variance, it was deduced that 48.6 % of the variance in technical human capital accumulation would be described in terms of the three remaining independent variables; worker life cycle stage (1), his occupational characteristics (2), managerial disposition (3), and supervisor's quality (6).

Results from the ANOVA table confirm that with 0.000a significance level, the model was significant. The coefficients' table shows that the most significant indicator was life cycle stage (1), 0.000 significance, while indicator (2), and (6), occupational

characteristics and managerial disposition, were not at all significant. Indicator (3), managerial disposition turned out to be almost significant, with .065. The other two indicators, worker occupational characteristics and supervisor's caliber were not significant and did not account for the cultural variations or differentials, just as in the cultural variation model.

Hence we can easily deduce that in all three models, life cycle stage, comprising worker's age, his marital status and his number of children, account for most of the variance in all human capital variances. That outcome supports the deliberations about the most positive variance being in Arctec Inc. with most of its workforce coming from, and residing in rural areas. The variances could also be explained in terms of the different selective criteria for recruitment by interviewing and recruiting at interviewer's or management's discretion. An issue which was not probed in this research and that would be valuable to examine in future studies. As for the variances in the cultural variance and the technical variance, these were also accounted for to some extent by managerial disposition, constituting manager's attitude, worker control measures, philosophy of the organization *vis a vis* development of its human resource, as well as the work environment. This finding translates with Arctec Inc., as the highest ranking in the extent of variances, also ranks relatively appropriate on the managerial disposition scale.

Testing for the managerial pre-dispositions was suggested by Inkeles et al., as a future research focus for the context of factory as a human capital agent for workers. Those findings

thus constitute an addition to the literature of development and in the fields of industrial psychology as well as management studies and political science and political economy.

Correlations

A two tailed correlation undertaking was applied in order to find out which of the two main significant independent variables accounted for the variance in which of the dependent variable aspects; the cultural, the social and the technical. From the correlation matrix in Appendix M, a mostly significant correlation between indicator (1); the life cycle stage variable, and the three dependent variables for variance is discovered. When competing with life cycle, as accounting for the variance of the three variable aspects, indicator (3) which is managerial disposition was insignificant as a predictor of variance, or as an influencing factor, especially in the social as well as in the technical human capital aspects. Thus Life cycle stage, emerging as the most influencing factor accounting for personal development and change, would direct attention to the need for more scrutiny in research accorded to the conditions and the different settings and factors affecting and getting affected by the life cycle stage variable. Through further examination of the systemic workings of such variable, as well as prospectively correlating it with other variables which were untested in this research, for reasons of time or scope limitations, more light would be shed on the real engines of change and thence development. As for the life cycle variable; and as Autotex was the one factory to have the highest ranking in this independent variable, and not Arctic inc., that would prompt for more research, as to what would the real causes of change or the different workings thereof be.

Chapter 5

CONCLUSION AND RECOMMENDATIONS

The findings of the research, never claim to be conclusive, nor totally confirmed, nor are they universal. The research just contributes by showing that we can effect the same and even sometimes, better human capital development in factory workers of a local firm just as we can do it in a foreign firm investing locally. The secret might lie in top management having a real and sincere interest in its workforce; it might lie in the workforce just looking up to their top manager as their role model and take after him. They might gain that insight when they see top managers, all the time on the shop floor, (just as was the case in Arctec Inc.), discussing work matters in front of them and with them, or when they grant them fees for training or further education. Many of the workers were witnessed to have returned to the factory, after they had left earlier, for the purpose of honoring their compulsory army training service. When they returned, a few years later, they would find their places reserved for them to re-assume their positions. The same goes for when they get well after a long, substantiated, sick leave period. This feature was absent in the other two factories. Top managers seldom conversed with their shop floor workers, or even got there. Still when they did, they had a remote attitude. Maybe this sense of distance is the problem. The foreign element is there while it is not truly there. All it cares for is production quotas and deadlines. By doing this,

the research is only attempting to substantiate for empirical observation. It does not claim that this is the reason. The secret might lie in some other factor yet to unravel; and that would need for that purpose many other micro-level and more in-depth kinds of studies in the same direction. Reserving the place for FDI to come and invest is not a proper scheme. Encouraging local entrepreneurs with the special qualities previously mentioned is the key. Incentives should be increased, varied and re-directed where they most productive, in human capital development as much as in physical earnings; because human capital is a form of retained earnings. Again, the focus of this study is on the individual, the human factor –of production-, which for the researcher represents the most important thing when development is addressed.

Considering the second runner up in both the cultural as well as in the technical index, Exilar, the foreign factory, might have demonstrated a bit of the effectiveness on the managerial disposition dimension, which clearly had its clear effect on both most influenced areas the cultural and the technical. While as for reasons why Autotex, the joint venture company, beat Exilar Egypt, in the social index, this might be owing to the many influences affecting this dimension outside of the workplace; such as the workers' rural residence and the proximity thereof, which fosters more familiarity between workers and acquaints them in a fashion to give them more space for social learning. When compared to Exilar's worker make-up, the latters were more heterogeneous in their social background and places of residence than the formers. It could as well be due to the nature of the production operations, usually dictated by the work organization in textile industries, and which depends almost entirely on machines, leaving more space for group interaction.

As for the laggard joint venture setting, although it ranked first on the differentials of life cycle and age, it did not do as well as the other two, in terms of results in human capital incremented stocks, which might be due to a feeling of oscillation between the two nationalities, the Turkish and the Egyptian, and not possessing any definite unique identity as its own. The workers might be yearning for a sense of belongingness that cannot be found within a hazy in-between identity that is not well demarcated, with which they can identify. A sense of ownership was lacking, which was most prominent in Exilar. In Arctec Inc., although that same sense of ownership was not detected-maybe due to the nature of organization of the industrial process, which was structured as quasi-assembly line-, they were looking at the Egyptian well-cultured well educated manager/owner as their role model, wishing for themselves the same family structure and work arrangement-especially when it came to father and son. In Exilar, on another note, workers looked up to the European managers and the top-notch high caliber Egyptian trainers and employees as well as segment and factory managers-of superior levels to their counterparts in the other two factories- they could identify with the various layered hierarchies as their aspired for, possibly attainable ranks. Again, scrutinizing the management system in Exilar; which prototyped to a great extent –except for the centralization pattern-, the Japanese post-Fordist pattern (see the Japanese Version and Global Toyotaism in Literature Review) was a fact well noted through the development and implementation of EPS, Exilar Production System which held much resemblance to the Toyota Production System/TPS both in essence and in form, as much as in the labeling. The modernity of management practices, as well as the effective positive attitudes of direct managers, added to the lively productive general work environment,

conducive to learning and to a sense of empowerment, all accounted for the second ranking.

Prospects for Future Research

Although, it is well maintained, that all these explanations are merely propositions that are not clear cut and could not gain any recognition as being the definite answers to the research questions, they nevertheless provide a clearer picture of the situation, and lay a path for future research that tackles more in depth and breadth horizons. For example the deliberations on human capital development, empowerment and the sense of ownership of the production process, could well be misleading, in essence, as in Smith's recalls of Windsor and Boie's claims, disqualifying the integrity of the concept of 'Total Quality Management', on implicit cultural grounds. He notes their argument that, "behind the illusion of employee empowerment lies team peer pressure and self-surveillance, as workers are subjugated by the values and norms of corporate cultures" (Windsor and Boie: in Smith, p182). As applied to Exilar's case, in particular, Smith notes another evidence by Parker and Slaughter, who designated 'lean' as 'management-by-stress' (Parker and Slaughter: in Smith, 183), and confirmed an added, hidden, 'culture of fear' from the nightmare of plant relocations if workers do not perform (ibid, 183).

Although the research came as a response to earlier scholars' calls for more meso and micro-level, country, and industry -specific studies, something is still missing, in order to

decipher the inner workings of the factory as a context for development. A research milieu that is, already, multi-faceted, multi-disciplinary, multi-layered and complex. Add to it the intersecting riddle of FDI; complexity is then compounded by many other influencing factors. Among these predictors would be the nationality of the foreign investor, a major predictor that was not scrutinized in this study and which could possess a major influence. The overall international status of the country of origin and its global industrial reputation also provide a central aspect, in the workers' interaction patterns with whatever human capital its subsidiary is delivering. A chief influencing factor, as well, would be the workers' pre-disposition to consider such attributes as favorable or unfavorable, and reacting accordingly either in a motivated enthusiastic or in a passive manner. Another factor would be the corporate culture of the mother company, an issue that was tapped upon lightly here, as it shapes the managerial pre-disposition and the overall work environment in the factory. This aspect, however, still needs future probing for further more in-depth examination.

Probing the extent of human capital accumulation and its measurement technique in this research, could as well be contested, on grounds of other more precise examination approaches. For example, the dependent variables could be examined in specific, as emphasizing the attitudinal versus the behavioral aspect of the accumulated stock, where, in the research at hand they were both aggregated. Some interest could center on considering only the behavioral as the most reflective of the actual differential and not the attitudinal, where some other would hub around to analyze both aspects in an exclusive individual manner.

Research Limitations

Limitations to the research at hand are numerous. The most prominent was that related to the difficulty to access factories during operation times and the unease incorporated with keeping workers off their machines for lengthy interviews. The first limitation caused a delay in starting field activities for the overly stretched out preparation time, wasted in clarifications, followed by negotiations. Feelings of unease during the course of carrying out actual field activities, prevented a laissez-faire disposition on the part of interviewers, who were tense and hasty in order to be able to stick to the time frame agreed upon with the factories' management. Nevertheless they succeeded at hiding their tension, which compounded their feelings of exhaustion at the end of each day.

A third limitation which transpired from the first two was the small sample sizes. These were also dictated by the different patterns of recruitment of each factory, and the different turnover rates, which both made it difficult to coordinate numbers of workers recruited within specific common dates. Fortunately, the decision to use the case study approach, which was originally dictated by the micro-level scope of study, helped alleviate the inconvenience of limited sample sizes. This approach proved to be very helpful for conducting a deeper level analysis of the three settings. While, some would argue that bigger sample sizes would still provide a broader span of analysis with higher credibility levels, both, Inkeles et al.'s previous study results, along with the results of this one, proved that depth is more important than breadth in analyzing the different causes of worker development, which until now could not be fully exposed.

A fourth limitation is the time and scope limitation. The nature of such research, as multi-faceted as it is, calls for a thorough and comprehensive analysis of each and every

influencing factor (independent variable). First, each variable should be examined on its own and then in combinations, using a multitude of statistical analysis tools such as co-variance, path analysis, multiple regression, which would need a considerable amount of work, and would, therefore, stretch-out behind the allotted time and far beyond the scope of this research. Another need exists to analyze, in detail, the research findings in light of the Fordism/post-Fordism narrative, scrutinized in the literature review, in order to come out with a definite answer as to the question of whether or not post-Fordism in its new form, of today, is merely 'Fordism in disguise'(in Cohen, 153). As some kind of dissatisfaction was sensed on the part of workers, in the three factories, as well as the lack of a strong work commitment culture, it would then be imperative to further investigate the missing links in a new system of work social organization in a non-union existence space. The ambivalence of workers' feelings and their sense of a lost identity, in the three factories, as well as the distance felt between them and their managers on one hand and between their local managers and foreign managements/customers on the other, all, call for a more tedious exercise, to uncover the perplexity of such new social organization of work relations. Retrieving and analyzing workers' perceptions on how they view the post-neo Fordist setting as serving their life objectives, would form the nexus of this further needed research.

Policy Implications

As for policy implications the results of this research as mentioned before, would suggest that national policy-makers do not trade off incentivizing local industrial investment, for the exaggerated blind concessions granted to physical FDI, if human capital is at the centre of their political and social agenda. O'Riain's account of Firebaugh's article reflecting on the

Irish developmental network state's role in fostering local industrial investment in the software and other business, is an obvious example, of regulated support effected growth and development (Firebaugh, 1992: in O'Riain, 1996, p. 91). It is a lucid example of a pro-active role of a state that cares to instrument an influential positive effect. Where the Irish state not only provided full support to these local undertakings they also combined their scaffolding practices with networking with indigenous experts who migrated in the 1980s to the US, securing network links with global customers in the industry; a unique huge exercise that only willing enlightened states could carry out. This finding confirms Ocampo's insistence on innovation and linkages for a way out (Ocampo, in Chang, ed., 97) and might lead to a pessimistic outlook such as that of Lall and Nolan (in Chang, ed., 277-299).

Direct subsidies, although useful in the short term, as well as trade protection measures, are now outmoded courses of public actions; an easy way out that is, nowadays, substituted for by new modern and more effective instruments such as building national systems of innovations, based primarily on networking with global partners in the respective industries. For now, as witnessed in the two studied factories that had an Egyptian component, Arctec Inc. and Autotex, depended mostly on their own efforts for networking, and enjoyed only some direct subsidies for exports. Government's technical contribution was restricted to providing some discounted foreign technical assistance, mediated through the industrial modernization center (IMC). Other than that, activities as for marketing, networking or linking with overseas expertise and global customers/partners are left completely to the discretion of the factories' owners/managers.

As for the foreign factories, they are a, sought after, virtue, by the local government because they relieve it of its responsibilities in tedious activities as in technical support,

marketing and/or networking; a fact witnessed in Exilar, when there was no existence of local government role except for regulating compliance with labor and environmental laws. That is one of the reasons why FDI is favored by the government; because it is considered a relief of major difficult responsibilities. However, when human capital and empowerment are in the spotlight, Egyptian entrepreneurs were proven to be more effective. This phenomenon might be due to a unique sense of national affinity, which would require further investigation on a social psychological, cross national level. Workers were witnessed to find affinity with Egyptian owners more so than with foreign ones, even if they looked up to them. They felt they were, whether intentionally or unintentionally, at distance; meaning emotionally discarded; a reality that did not foster much the stock of human capital accumulation in any of the three domains, especially when these feelings of alienation were compounded by those of ambivalence in the Turkish/Egyptian joint venture factory, Autotex.

Whereas, these findings, do not confirm that FDI is bad and should be neglected, as it has been proved to be invaluable, for the noble purpose of human capital development, as well as for economic growth, particularly in the technical realm; just as established by Mounshipouri, Welsch and Kennedy. Yet, and as they continuously assert, it must be controlled, regulated, and selectively pursued.

As for international policy-makers, especially those involved in the development field, Chang's account (Chang, ed., 263 and Robertson, 196) provides a lucid example of selective FDI policies and biased practices towards developing host countries. These policies which are restrictive to full empowerment and favoring their home with real skill-intensive operations, while exporting only physical manufacturing operations to host countries, contributing only a fraction of real human capital to be accumulated accumulation, especially on the long term.

This case was clearly detected in the words of middle managers and training division engineers as well as supply chain directors in Exilar Egypt, who yearned for a share of the design pie, the great marketing adventure or the planning undertaking. Those were unfortunately reserved for the headquarters, with strict control measures and protection passwords that kept the system's private parts only for the elite home natives. It was a bit frustrating especially to the highly qualified professionals of Exilar Egypt, who belonged to the organization, but who might have experienced, nevertheless, a bit of an inferiority feeling *vis a vis* their European counterparts because they were only trusted with operations management and execution, and not the more rewarding policy formulation activities. Thus tracing both foreign arrangements' style, even the power in decision-making, was restricted in the subsidiary to production operation events execution and management. Here, the very much centralized nature of planning, marketing and design activities lacked the superiority of the 'Global Toyotaism' system of decentralized global arrangements. Even in Autotex, the Turkish-Egyptian joint venture, direct supervisors, were envious and self pitiful that in Turkey they had superior way-developed weaving machines than the ones they were working on here. In their own words, the few supervisors who had travelled earlier, said they were more efficient, time and effort consuming, and that they wished they had them here, instead of the old-fashioned machines they had.

As for Arctec-Inc, they wished they had more of the foreign technical assistance, both in manufacturing technology and in quality management systems, which they felt was urgently needed and not abundantly networked nor efficiently coordinated furnished. They yearned for a similar support, as in linking them with networks of global customers and export markets. This kind of support was not adequately nor sufficiently furnished

A persistent problem, though, is the resistance of large TNCs and other medium sized but successful foreign companies to invest in Egypt, or to form joint ventures. As previously mentioned, the difficulty to find a pool of such (physical foreign investments and foreign partnership arrangements) to choose from, during the sampling process exercise, is a clear illustration of this current gloomy state of affairs; not to mention the willingness of the few present constituents to exert more effort, for changing dispositions or philosophies, or responding to the recent 'FDI for empowerment and development' discourses. These recent pressing calls, might act, more as a repellent rather than an attracting agent. Fontanier, thus asserts that the decision rests more in the hands of the countries of origin, and calls for more country, industry, and firm specific research, to further examine the different context's effected outcomes. The same applies for Vidal who keeps iterating, that "ideology and political choice are … fundamental elements determining managerial strategy" (Vidal, 2008, 371).

Possibly here, is where the role of foreign policy makers, comes in handy. Where sometimes local host governments seem paralyzed in the face of super power intentions and hidden agendas or lack of interest in righteous development objectives; that are not mutually exclusive from rightful profit-making. As vividly reasoned and cautioned by Simai (in Mavrotas and Shorrocks, ed., 261) they must beware of misusing new global economic, industrial and trade directives only to their advantage, denying the less privileged equal opportunity. This matter is central to the development and the empowerment discourse, since TNCs constitute gigantic unmatched powers *vis a vis* local host governments, unbending and unyielding either for new demands or emergent restrictions, let alone their continuous

unanswered pleas for more investments in general, and especially in certain geographic locales that are most needy for these investments. Although they also constitute super powers in the face of their own home governments, those governments should show interest and actually move on to practically exert some kind of effort and weight to influence their native TNCs to follow their international development directives towards a more equally matched global community.

That brings us to the most important detail in this complex, hands-on, development narrative. Previous calls for an indispensable, much needed, efficient role of the host state are critically re-iterated. A capable state with super instrumental policy capacities, that, until that moment did not feature major signs of influence, nor any perceived weight as an important 'constituent', not to mention 'partner', within the international business community arena. A thorough investigation of the Egyptian state's capabilities, credence, strengths and weaknesses, vis a vis the international community, in our case, the industrial one, is a due and ripe subject for critical further research.

As witnessed in the three factories managers, foreign and Egyptian, were not, at all, against a real contribution in human capital development. On the contrary they were all for it, in principle and extent. However the concept was more or less an abstract potential, short of being fully realized, restricted and blurred by more pressing issues of honoring deadlines, and increasing profitability. That would mean embracing the concept if it would not hamper the usual workflow; an undisputed situation that lays the issue higher on the power ladder to headquarter top management and government officials higher on the totem pole. These top officials, not excluding, those on top of the world organizations' hierarchies, are the ones who are capable of infusing a shift in their philosophies and respective aggregate policies towards

their host countries, for internalizing calls for benevolent FDI, because it would actually lead to a maximization of profit in a more virtuous and sustainable fashion (see Henry and Springborg; and Chang, Nayyar, and Khor: in Chang, ed.).

Concluding Remarks

Eventually, this Master's thesis is not about passing judgments, nor does it claim that it would discover the magic formula for development. It is rather a humble effort to try to explore and hopefully to unravel possible causes and effects and understand some of the unaccounted for, phenomena in the social organizational realms. It would be only to try to explain some of the relationships, to confirm the associations or disassociations between variables of change and their manifestations. A little more than forty years ago, Inkeles et al. embarked on a major undertaking to find an answer for personal development in the different social and organizational contexts. They found out that education was the major cause. However their major finding was that an individual would not stop to develop, in all aspects, after he reached adulthood. They discovered that the major predictors for such continuous change and development could be either in his home, where he is exposed to the mass media, or in his workplace, such as in the street as a taxi driver, or in the factory as a worker. This research comes out as one of a long series of extensions to Inkeles et al.'s work from a broader and more specific, human capital perspective.

The outcome of the research does not conclude that physical FDI is bad nor that local physical industrial investment by local investors is a better means from a perspective of worker development. If it could, it would just make the recommendation that not all FDI is

virtue. The relentless pursuit of a physical foreign investment could rest a while, whereas more encouragement could be granted to local entrepreneurs. A special local mindset is required for such investment ventures. A cultural enlightened, well educated, well informed and emancipated entrepreneur, must be sought after, and motivated to invest in industry. Besides the multiple, growth factors that ensue, other worldly higher value growth would accumulate. Personal development of workers in the factory, from a corporate social responsibility perspective comes to the forefront of industrial investment. While some business gurus would refute this reasoning, on grounds that business is here for profit and not for welfare, a quick look at previous 'human capital' as a factor of production, in the most renowned economics' classics would suffice to make them tilt their outlook. Philanthropy is the essence of development. Especially when it is coupled with profit making and fruitful learning escapades in the factory it is then multi-rewarding; a form of sustainable development. A developed workforce would eventually lead to a more developed, efficient, and profitable, world class venture.

BIBLIOGRAPHY

Adler, P. S., and B. Borys. 1996. Two types of bureaucracy: enabling and coercive. *Administrative Science Quarterly* 41, no. 1.

Alderson, Arthur S. 2004. Explaining the Upswing in Direct Investment: A Test of Mainstream and Heterodox Theories of Globalization. *Social Forces* 83, no. 1:81-122.

Alonso, L.E. and M. Martinez Lucio (eds) (2006) *Employment Relations in a Changing Society: Assessing the Post-Fordist Paradigm*. Basingstoke: Palgrave Macmillan.

Amin, Ash. 1994. *Post-Fordism: a reader.* Oxford; Cambridge, Mass.: Blackwell.

Arab Human Development Report 2002: Creating Opportunities for Future Generations, Overview: A Future for All. United Nations Development Program, Arab Fund for Economic and Social Development

Banuazizi, A. 1987. Social-psychological approaches to political development. *Understanding Political Development,* 281-316.

Bateman, W. 1967. An Application of Cost-Benefit Analysis to the Work-Experience Program. *The American Economic Review* 57, no. 2:80-90.

Baxter, P., and S. Jack. 2008. Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report* 13, no. 4:544-559.

Beynon, H., and T. Nichols. 2008. Patterns of work in the post-Fordist era: Fordism and post-Fordism. *Capital & Class* 32, no. 3:152.

Beynon, H., and Nichols, T. 2006. *The Fordism of Ford and modern management: Fordism and post-Fordism.*Edward Elgar Pub.

Blaug, M. 1976. The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey. *Journal of Economic Literature* 14, no. 3:827-855.

Blomström, M., and Kokko, A. 2003. *Human Capital and Inward FDI.*Centre for Economic Policy Research.

Brennan, K. J. Undergraduate Honors Program International Studies Is All FDI Created Equal?: An Empirical Analysis of the Effect of Foreign Direct Investment and its Sectoral Destination on Income Inequality in Developing Countries.

Çarkoğlu, A., Eder, M., and Kirişci, K. 1998. *The political economy of regional cooperation in the Middle East.*Routledge.

Chang, Ha-Joon. 2003. *Rethinking development economics.* London: Anthem Press.

Cohen, Sheila. 2008. Patterns of Work in the Post-Fordist Era: Fordism and Post-Fordism. *Capital & Class*no. 96:152-157.

Diab, T. A. National Industrial Innovation Systems-Arab Region.

Eid, F. 2006. Recasting Job Creation Strategies in Developing Regions: A Role for Entrepreneurial Finance. *Journal of Entrepreneurship* 15, no. 2:115.

Elam, M. 1994. Puzzling out the post-Fordist debate: Technology, Markets and Institutions. *Post-Fordism: a reader*43–70.

Emmott, B. 1992. Japan's global reach after the sunset. *The Pacific Review* 5, no. 3:232-240.

Featherstone, Mike. 1990. *Global culture : nationalism, globalization, and modernity : a Theory, culture & society special issue.* London ; Newbury Park: Sage Publications.

Fergani, N. *Arab human development report 2002.*United Nations Development Programme, Regional Bureau for Arab States.

Figini, Paolo S.,Enrico. 2006. Openness, Economic Reforms, and Poverty: Globalization in Developing Countries. *The Journal of Developing Areas* 39, no. 2:129-151.

Form, W. 1979. Comparative Industrial Sociology and the Convergence Hypothesis. *Annual Review of Sociology* 5, no. 1:1-25.

Fortanier, F. 2007. Foreign direct investment and host country economic growth: Does the investor's country of origin play a role? *TRANSNATIONAL CORPORATIONS* 16, no. 2:.

Fujita, K., and R. C. Hill. 2006. Global Toyotaism and local development. *Patterns of work in the post-Fordist era: Fordism and post-Fordism*21.

Gibson-Graham, J. K. 2006; 1996. *The end of capitalism (as we knew it) : a feminist critique of political economy.*1 University of Minnesota Press , 2006 ed. Minneapolis: University of Minnesota Press.

Gorg, H., and D. Greenaway. 2004. Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment? *The World Bank Research Observer* 19, no. 2:171-197.

Hanson, G. H. 2001. *Should countries promote foreign direct investment?*United Nations.

Harrison, G. 2004. Why Economic Globalization is Not Enough. *Development and Change* 35, no. 5:1037-1047.

Henry, C. 2003. A Clash of Globalizations: Obstacles to Development in the Middle East. *Harvard International Review* 25, no. 1:60-65.

Henry, Clement M., and Springborg, Robert. 2001. *Globalization and the politics of development in the Middle East.* Vol. 1. Cambridge, UK ; New York, NY, USA: Cambridge University Press.

Huntington, S. P., Weiner, M., and Almond, G. 1987. *Understanding Political Development: An Analytic Study.*Harper Collins.

Inkeles, Alex, and Smith, David H. 1974. *Becoming modern : individual change in six developing countries.* Cambridge, MA: Harvard University Press.

Jack Martin, Jack and Serich, Mary. Pre-Apprentice Training A Test Preparation: Manual for the Skilled Trades. Internet domain name: [ppt]. www.cisco.org/etc/preapp.ppt

Khor, M. 1993. South-North Resource Flows. *Penang, Malaysia: Third World Network*.

Lall, S. 2003. Technology and industrial development in an era of globalization. In. H. *Rethinking development economics*277-298.

Landy, Frank J., and Conte, Jeffrey M. 2004. *Work in the 21st century : an introduction to industrial and organizational psychology.* New York: McGraw-Hill.

Lee, E., and M. Vivarelli. 2006. Social Impact of Globalization in the Developing Countries, The. *Int'l Lab.Rev.* 145, 167.

Lepak, D. P., and S. A. Snell. 1999. The Human Resource Architecture: Toward a Theory of Human Capital Allocation and Development. *The Academy of Management Review* 24, no. 1:31-48.

Lipietz, A. 1987. *Mirages and miracles: The crises of global Fordism.*Verso London.

Lipschutz, R. D. 2003. Regulation for the rest of us? Global social activism, corporate citizenship, and the disappearance of the political. *Center for Global, International and Regional Studies*.

Lipschutz, R. D., and Rowe, J. K. 2005. *Globalization, governmentality and global politics: regulation for the rest of us?*Routledge.

Mavrotas, George, Shorrocks, Anthony F., and World Institute for Development Economics Research. 2007. *Advancing development : core themes in global economics.*

Basingstoke England ; New York: Palgrave Macmillan in association with the United Nations University World Institute for Development Economics Research.

McKay, S. C. 2006. *Satanic mills or silicon islands?: The politics of high-tech production in the Philippines.*ILR Press.

Miyamoto, K. 2003. *Human Capital Formation and Foreign Direct Investment in Developing Countries.*Organisation for Economic Co-operation and Development.

Monshipouri, Mahmood 1952- Welch, Claude Emerson Kennedy,Evan T. 2003. Multinational Corporations and the Ethics of Global Responsibility: Problems and Possibilities. *Human Rights Quarterly* 25, no. 4:965-989.

Moor, Liz, and Jo Littler. 2008. Fourth Worlds and Neo-Fordism. *Cultural Studies* 22, no. 5:700-723.

Myers, R. H. 1986. *Classical and modern regression with applications.*Duxbury Press Boston.

Nayyar, D. 2002. Towards global governance. *Governing Globalization: Issues and Institutions*1.

Nissanke, M., and E. Thorbecke. 2006. A Quest for Pro-Poor Globalization. *Research Paper* 46, .

Nolan, P. 2003. Industrial Policy in the Early 21st Century: The Challenge of the Global Business Revolution. *Rethinking development economics*299-321.

Noland, M., and Pack, H. 2003. *Industrial Policy in an Era of Globalization: Lessons from Asia.*Peterson Institute.

Noorbakhsh, F., A. Paloni, and A. Youssef. 2001. Human Capital and FDI Inflows to Developing Countries: New Empirical Evidence. *World Development* 29, no. 9:1593-1610.

Nordlinger, E. 1987. Taking the state seriously. *Understanding political development*353-390.

Ó Riain, S. 2004. *The politics of high-tech growth.* New York: Cambridge University Press.

Ocampo, J. A. 2002. Rethinking the development agenda. *Cambridge Journal of Economics* 26, no. 3:393.

Oman, C. 2000. *Policy Competition for Foreign Direct Investment: A Study of Competition Among Governments to Attract FDI.*OECD (Organisation for Economic Co-Operation & Dev.

Rau, W. C. 1980. The Tacit Conventions of the Modernity School: An Analysis of Key Assumptions. *American Sociological Review* 45, no. 2:244-260.

Robertson, R. T. 2003. *The three waves of globalization : a history of a developing global consciousness.* New York: Zed Books.

Sadik, A. T., and A. A. Bolbol. 2001. Capital Flows, FDI, and Technology Spillovers: Evidence from Arab Countries. *World Development* 29, no. 12:2111-2125.

Schirato, T., and Webb, J. 2003. *Understanding globalization.*Sage.

Schnaiberg, A. 1970. Measuring Modernism: Theoretical and Empirical Explorations. *The American Journal of Sociology* 76, no. 3:399-425.

Schooler, C. 1996. Cultural and Social-Structural Explanations of Cross-National Psychological Differences. *Annual Review of Sociology* 22, no. 1:323-349.

Schultz, T. W. 1961. Investment in Human Capital. *The American Economic Review* 51, no. 1:1-17.

Schultz, Theodore W. 1990. *Restoring economic equilibrium : human capital in the modernizing economy.* Oxford, UK ; Cambridge, MA: B. Blackwell.

Schultz, Theodore W. 1970. *Investment in human capital : the role of education and of research.* New York: Free Press.

Schuurman, F. J. 1993. *Beyond the impasse: new directions in development theory.*Zed Books.

Smith, A. 2008. Review Essay: Working Lives: Cultural Control, Collectivism, Karoshi. *Sociology* 42, no. 1:179.

Smith, Andrew. 2008. Working Lives: Cultural Control, Collectivism, Karoshi. *Sociology* 42, no. 1:179-185.

Svennilson, I. 1971. Education, research and other unidentified factors in growth. *Human capital formation and manpower development*43.

Thomas, B. K. 2007. Doing Development Research edited by Vandana Desai and Robert B. Potter. *Development and Change* 38, no. 3:560-561.

Tomaney, J. 1994. A new paradigm of work organization and technology? *Post-Fordism: a reader*157–94.

Vidal, M. 2008. Joint Review: Steven C. McKay Satanic Mills or Silicon Islands? The Politics of High-Tech Production in the Philippines Ithaca: ILR Press, 2006,{pound} 12.50 pbk (ISBN: 0 8014 8894 X), xii 253 pp. *Work, Employment & Society* 22, no. 2:371.

Vidal, M. 2007. Manufacturing empowerment?'Employee involvement'in the labour process after Fordism. *Socio-Economic Review* 5, no. 2:197.

Virno, Paolo. 2007. General Intellect. *Historical Materialism* 15, no. 3:3-8. Brill Academic Publishers.

Wang, Y. 2007. Trade, Human Capital, and Technology Spillovers: an Industry-level Analysis. *Review of International Economics* 15, no. 2:269-283.

World Bank Staff. 1997. *World Development Report 1997: The State in a Changing World.*Oxford University Press, Incorporated.

Wykstra, Ronald A. 1971. *Human capital formation and manpower development.* New York: Free Press.

Appendix A

Arithmetic Test*
English version

1) 2 + 8 + 5 + 7 + 2 + 1 =

a) 23
b) 24
c) 15
d) none of the above

2) 388 – 99 =

a) 287
b) 288
c) 289
d) none of the above

3) 800 x 9 =

a) 7200
b) 8100
c) 7400
d) none of the above

4) 40 ÷ 3 =

a) 13.13
b) 13.03
c) 13 1/3
d) None of the above

5) Reduce to lowest terms: 34/38 =

a) 34/38
b) 17/19
c) 5/3
d) None of the above

6) Arrange the following socket wrenches in order from largest to smallest:

1/2, 3/16, 5/8, 1/4

a) 5/8, 1/2, 1/4, 3/16
b) 3/16, 1/2, 5/8, 1/4
c) 1/2, 3/16, 5/8, 1/4
d) None of the above

7) Arrange these decimals in order from smallest to largest.

.76, .7, .076, .071

a) .76, .7, .076, .071
b) .7, .071, .076, .76
c) .071, .076, .7, .76
d) None of the above

Ratio

8) A local factory employs 50 salaried workers and 575 hourly workers. What is the ratio of salaried workers to the total number of workers in the plant?

a) 2 : 25
b) 2 : 23
c) 1 : 75
d) None of the above

Proportion

9) A vehicle traveling at a rate of 110 miles in 2 hours will travel how many miles in 12 hours?

a) 330 miles

b) 420 miles
c) 680 miles
d) None of the above

Percent

10) If daily production of a stamping plant is 136,000 parts and the average amount of scrap is 3%, how many bad parts are produced in one day?

a) 4080 bad parts
b) 408 bad parts
c) 4800 bad parts
d) none of the above

11) Solve for C:

4 + C = 10

a) 14
b) 4
c) 6
d) none of the above

12) *Equations* (solving for an unknown):

n : 4 = 3

n =

13) Solving number and letter sequences:

7 – 8 – 22 – 9 – 10 – 21 – 11 – 12 –

14) Three consecutive numbers total 12. What is the lowest of the three numbers?

15) Multiply: (y – z) (y + z)

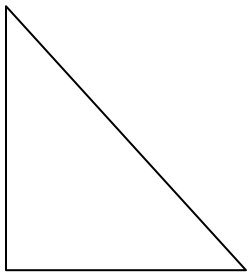
a) 2y – 2z
b) y2 – z2
c) 2y+ 2z
d) none of the above

16) What is the next number in the sequence?

25 – 100 – 300 – 600 – 600 - ____

a) 0
b) 1200
c) 800
d) none of the above

17)



If < CAB = 45°
Find < CBA
< CBA =

*Jack Martin, Mary Serich. Pre-Apprentice Training A Test Preparation: Manual for the Skilled Trades. [ppt]. www.cisco.org/etc/preapp.ppt

بيـــانات تعريفيـــة	
محافظة : _____	محافظة
قسم : _____	قسم / شياخة
شياخة قرية : _____	كود المصنع
اسم المصنع : _____	كود العامل
كود المصنع : _____	
اسم العامل : _____	
كود العامل : _____	

وقت البداية : ساعة

دقيقة

اختبار رياضيات

[1] ... + ... + ... + ... + ... + ... = ... + ... + ... + ... + ... + ...

(أ) 23

ب) 24

ج) 15

د) غير ذلك .

[2] 288 – 99 =

(أ) 287

ب) 288

ج) 289

د) غير ذلك

[3] 100 × 1 =

(أ) 7200

ب) 8100

ج) 7400

د غير ذلك

[ا] 0. ÷ =

(أ) 13.13

ب) 13.03

ج 3 $\frac{1}{3}$

د غير ذلك

[ز] حول / حلل إلى أقل نسب $\frac{34}{38}$

(أ $\frac{34}{38}$

ب $\frac{17}{19}$

ج $\frac{5}{3}$

د غير ذلك

[ز] رتب من الأكبر إلى الأصغر :

$\frac{1}{2}$ ، $\frac{3}{16}$ ، $\frac{5}{8}$ ، $\frac{1}{4}$

$\frac{5}{8}$ ، $\frac{1}{2}$ ، $\frac{1}{4}$ ، $\frac{3}{16}$

$\frac{3}{16}$ ، $\frac{1}{2}$ ، $\frac{5}{8}$ ، $\frac{1}{4}$

$\frac{1}{2}$ ، $\frac{3}{16}$ ، $\frac{5}{8}$ ، $\frac{1}{4}$

د غير ذلك

[ز] رتب من الأصغر إلى الأكبر :

0.76 ، 0.7 ، 0.076 ، 0.071

(أ) 0.76 ، 0.7 ، 0.076 ، 0.071

ب) 0.7 ، 0.071 ، 0.076 ، 0.76

ج) 0.071 ، 0.076 ، 0.7 ، 0.76

د غير ذلك

[8] مصنع محلى يشغل 50 عامل بالأجر الثابت الشهرى و 75 عامل بالساعه .

ماهى نسبة عدد العمال بالأجر الثابت إلى مجموع عدد العمال الكلى فى المصنع؟

(أ) 2 : 5

ب) 2 : 3

ج 3 : 5

د غير ذلك

[9] <u>المقدار النسبى</u> :

سيارة تسير بسرعة 10 ميل فى ساعتين، كم ميلا تقطعه فى 2 ساعة؟

(أ) 30 ميلا

ب) 20 ميلا

ج) 80 ميلا

د غير ذلك

[10] <u>النسبة المئوية</u> :

الإنتاج اليومى لمصنع إكسسوارات سيارات 36000 قطعة منهم متوسط التالف = 1 %.

ما هى عدد القطع التالفة فى اليوم الواحد؟

(أ) 4080

ب) 408

ج) 4800

د غير ذلك

[1] ما هى قيمة س ؟

10 = س + 4

(أ) 14

ب) 4

ج) 6

د غير ذلك

[2] معادلة :

ن ÷ 3 = 3

ن = ...

[3] التسلسل :

1 – 2 – 0 – 1 – 2 – 3 – .....

.....

[4] ثلاث أرقام متتالية مجموعها = 12

ما هو أصغر رقم فى الثلاثة؟

.....

.....

.....

[5] ما الرقم التالى للتسلسل ؟

25 – 100 – 400 – 500 – 600 – .....

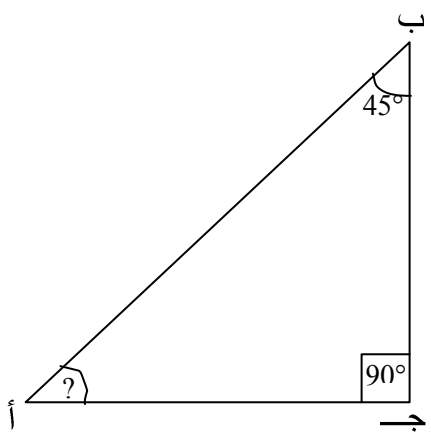
(أ صفر

ب) 1200

ج) 800

د غير ذلك

[6] في الشكل الموضح :



إذا كانت < أ ب جـ = 45°

فإن < ب أ جـ = ؟ .....

وقت النهاية

ساعة

دقيقة

Jack Martin, Mary Serich. Pre-Apprentice Training A Test Preparation: Manual for the skilled trades. [PPT]. www.cisco.org/etc/preapp.ppt

Appendix B

Classified Question Grouping for Themes

Classified Question Grouping for Themes	
Themes	Designated Questions
Active Citizenship	AC_1, AC_2, AC_4ab, AC_5, AC_6
Calculability and Trust	CA_6, CA_7, CA_8
Change Valuation	CH_1, CH_2, CH_12, CH_13, CI_52)
Consumerism and Consumption Attitudes	CO_2, CO_3, CO_5, CO_6, CO_9a
Dignity Valuation	DI_5, DI_6, DI_7, DI_10
Education Valuation and Aspiration	AS_1a, AS_2, AS_3, AS_8, CI_13, SC_2
Economic aspiration	AS_11, CO_7, CO_8, NE_1
Efficacy	EF_1, EF_2, EF_3, EF_4, EF_5, EF_11
Growth of Opinion	CI_1, GO_2, GO_3, GO_7, GO_8
Information	IN_1, IN_2, IN_3, IN_4, IN_5, IN_6, IN_7, IN_8, CO_1a, CO_2a, MM_8
Intelligence Level	Arithmetic test + Ability to learn from observation

			sheets			
	Job Satisfaction/ Industrial Preference		AS_5a, SC_6, SC_9, WC_2ab, WC_9, WC_10ab, WC_11ab, WC_12ab, WC_55			
	Mass Media Attitude and Exposure		MM_5ab, MM_6, MM_7, MM_9, MM_10, MM_11			
	Openness to New Experience		NE_2, NE_3, NE_5, NE_6			
	Professional Ambition		AS_5b, AS_7a, b, WC_2c			
	Planning Valuation		(PL_1, PL_3, TI_3, TI_4)			
	Responsibility and Time Valuation		CA_3, CA_50, EF_8, EF_9, ST_5, ST_6, TI_5, TI_7			
	Social Stratification Understanding and Fulfillment		AS_6, SC_6, SC_10			
	Technical Skill Valuation		AS_3b, AS_4, TS_12, TS_14			
	Understanding Production		UN_1, UN_2, UN_3			
	Verbal Fluency		AS_2, CO_9b, GO_2, SC_10, WC_10b, WC_11, WC_12			
	Women's Rights and Minority Opinion Valuation		_1b, GO_5, GO_6, WR_3, WR_4, WR_7			
	Workmanship and technical Proficiency		(factory records)+ leadership abilities, work stability, workmanship, responsibility(supervisors' ratings)			

Worker Questionnaire

Detailed Questions

Active Public Participation AC / Behavioral BI (social/political)

AC_1. Do you belong to any organization/association/club, such as social clubs, unions, religious institutions' organizations, political groups, or other groups?
Yes / No (compulsory ones omitted)

AC_2. What are the names of these organizations? (Coded for number of organizations)
Active Citizenship

AC_3. Which of these organizations takes a stand on political or public issues, such as "a current issue"? (Coded for number of organizations)

AC_4. Have you ever talked to or written to some government official or political leader to complain about an issue or to suggest a solution to one?
Please state the issue.
Active Citizenship

AC_5. How many times have you voted during the past [..] years? -------.

AC_6. (Not BI) Have you ever thought over or got highly concerned regarding some public issue, or a law Such as 'Real Estate law' or 'sales taxes'?
Frequently/Few times/Never
Active Citizenship

Aspirations (educational and occupational) (Social and cultural)

AS_1. How much schooling (reading and writing) do you think children like or yours should have? (Coded for number of years)
Education Valuation (AS_1, 2, 8, 9, CI_13, SC_2)

AS_2. (BI) What good is an education for an ordinary man? -------
[Probe] What else is it good for? ------
(+Verbal Fluency)
Education Valuation (AS_1, 2, 8, 9, CI_13, SC_2)

AS_3. Suppose a man has a young son about to begin school. The man is too poor to keep his son in school for more than a few years. Here are some subjects the boy the boy might study in school. Which subject do you think is most important for the boy to learn?

1. To learn to read and write very well.
2. T o read the Koran or the Bible and learn other religious activities.
3. To learn some useful trade, like how to repair modern machines.

(Technical Skill Valuation)

AS_4. And which is second in importance for the boy to learn? -------

AS_5. What in your opinion is the best occupation a person of your experience and ability can hope for? (Obtain specific job title). Coded for:

1. Absolute status level (BI)
2. level relative to respondent

(Job Satisfaction/industrial preference)

AS_6. Why is that? ----------
Coded for:

1. Number of themes (BI)
2. Number of sub-themes (BI)
3. Number of words (BI)

(+Verbal Fluency)

AS_7. Suppose a man is economically well off and has a son. What is the best line of work he may encourage his son to follow? ----------
Coded for:

1. job classification (BI)
2. level of occupational aspiration

AS_8. Some people say that the more schooling a person gets the better off he is. Others say that if a man has a good head, he does not need much schooling. What is your opinion?
Education Valuation (AS_1, 2, 8, 9, CI_13, SC_2)

AS_9. A poor cultivator has only one son, aged 10, and generally needs this son's full time help in cultivation so the family will be able to raise enough food to eat [well]. But the son wishes to continue to attend school, rather than working fulltime. What should the father decide on this question?

If answer is 'Both', then "What should the son decide on?"

Work for father/continue in school.

Education Valuation (AS_1, 2, 8, 9, CI_13, SC_2)

AS_11. Which of these two jobs would you prefer a son of yours to take assuming, he was qualified for either?

1. a skilled machine worker job for LE 3000 per month
2. or a white collar desk job (the work of a clerk in an office) at LE 2000 per month

Economic Aspirations

Calculability and Trust (social)

(Trust strangers, rely on a moderately lawful world, men could be governed by law to meet their obligations, closely related to efficacy and technical skill valuation)

CA_3. There are many things a man wants in those he works with. Which of the following things would you say is most important in fellow workers?

That they be friendly and good companions/ Reliable fulfilling their share of work/ Men of good character, respected in the community.

(Responsibility Valuation)

CA_6. When you meet someone for the first time, what should you do?

Trust him until he proves to be not worthy of that trust/ Be cautious about trusting him until you know him better/ Not trust him because he may take advantage of you. Active Citizenship

CA_11. Some say it is a great burden for a mere boy to be responsible and reliable all the time. Others say he must be taught always to be responsible and reliable even if it is a great burden (very difficult).

In your opinion how often should one excuse a boy who is sometimes irresponsible?

Always excuse him/ Most times/ Few times/ never (excuse him)

(Responsibility Valuation)

CA_50. In the place where you work there certainly must be workers who at times don't do their share of the work. In general, how have you acted when they did not?

I have not been bothered much (not cared, not concerned)/ It did not seem good, but it was the boss's responsibility/It seemed so bad that I was tempted to say

something to them/ It seemed so bad that I told them (tried to make them see) that their conduct was not right.

Change Orientation (technical and social)

CH_1. In your line of work do you find that things remain the same from year to year, or is there much change in how things are done, with the bringing in of new machines, tools, and ways of working?

Would you say in your work from year to year things:
Stay exactly the same/ mostly stay the same/ change much/ change very much
Change Valuation

CH_2. (.You said that in your work things… (CH1).

1. Now some people consider that an advantage
2. Some think it is a disadvantage
3. Some say it does not matter
4. Some say they never thought about it.

What do you say?
Change Valuation

CH_3. While some people say that it is useful to exchange / discuss ideas about new and different ways of doing things, others think that it is not worthwhile since the traditional and familiar ways could do the job. Do you feel that thinking about new and different ways/forms of doing things is:
always useful/ usually useful/ only useful at times/ rarely useful
Change Valuation

CH_6. How about the freedom of women to do things outside the home?
Is that:
Changing rapidly/ changing slowly/not changing at all.
Women's Right (7, CH-6 and CH_7)

CH_7. How do you feel about that? Is the change: Too fast/too slow/ just right?
Women's Right (7, CH-6 and CH_7)

CH_8. How about the opportunities for a poor man to improve his economic condition?
Are these opportunities: Increasing greatly/ Increasing somewhat/ decreasing somewhat/decreasing greatly/ remaining the same.
"Optimism"

CH_9. Some say that the opportunities a boy has to get [well] educated are increasing. Others say they do not see much change in this. What is your opinion? Are a young man's opportunities to get [a good education]: increasing greatly (rapidly)/ increasing somewhat/remaining the same/decreasing. "Optimism"

CH_51. In the present period, new things such as, ---- are being made. Some people say that these things have brought advantages and comfort to our lives. Others say there have been more disadvantages due to these things.

What is your opinion? _____

Change Valuation

Active Citizenship (social)

CI_1. Which is more important right to a citizen?

His right to vote/ his right to free education

CI_7. Suppose there was a difference in advice given by two important sides as what you should think on an important public issue. Whose advice would you give most weight to if:

1. Religious leaders gave one advice, and
2. The government gave another?

Active Citizenship

CI_13. What should most qualify a man to hold high office?

Coming up from (right, distinguished or high) family background/ Devotion to the old and (revered) time old ways/ Being the most popular among the people/ High education and special knowledge?

Education Valuation (AS_1, 2, 8, 9, 51, CI_13, SC_2)

CI_52. In your opinion, to improve its economic situation, what is it that the country needs most?

A total and immediate change/ a total but gradual slow change/ a partial immediate change/ a partial slow change/ no change

Change Valuation

Consumption Attitudes (cultural)

CO_1. (BI) Now I would like to ask you about some of the goods people have or may want in the future. Present picture of an I-pod. Can you tell me what it is?

(Information)

Correctly names (I-pod)/ don't know/ other specify.

CO_2. (BI) What is in this picture?

Present picture of DVD player.

Correctly names it/ don't know/ other specify

CO_4. Show picture of I-Pod. Do you own one? To those who do not. Is this something you would like to own?

Very much/ somewhat/ Not at all

CO_5. Show picture of DVD player. Do you own one? To those who do not. Is this something you would like to own?

Very much/ somewhat/ Not at all

CO_7. What other things besides those in the pictures would you very much like to own?

(BI) No probing or encouragement of responses. But simply record each item mentioned spontaneously_ coded for:

1. number of consumption or production items
2. number of production items
3. number of consumption items
4. number of high cost items
5. number of additional items

Change Valuation

Economic Aspirations

CO_9.

1. Some people say that the more things a man possesses-like new clothes, furniture and conveniences-the happier he is.

2. Others say that a man's happiness depends upon other things beyond these. What is your opinion? _____

Dignity (social)
(Of the others, meaning subordinates more so than of oneself)

DI_5. Suppose your job was changed to that of supervising a group of men in the factory. You are supposed to keep production up at a high level. If one of the men you were supervising made a mistake causing a big loss, how would you talk to him about his mistake?

Bawl him out good and loud/criticize him sharply but quietly/criticize him mildly
Dignity (SUPERVISOR)

DI_6. If a housewife spends more than the family income allows her to, and this is not the first time it has happened nor the first time he has called it to her attention, what should the husband do?

Beat her up/bawl her out severely/give her a good talking to/just call it to her attention again.
Dignity

DI_7. There are different opinions about how much one needs to respect the dignity of a boy about 11 and 12 years of age as against that of an adult man.

Which of the following is more correct, in your opinion regarding a boy's dignity?
It is less important than a man's/as important as a man's/more important than a man's (SUPERVISOR)

DI_10. Suppose a factory worker makes a great mistake which causes a big loss.

His supervisor finds out about the mistake and loudly berates the worker in front of the other workers. How do you think the other workers would react to this?
They would not pay any attention since it is not their problem/they would feel sorry for the mistaken worker and angry at the supervisor.
Dignity (WORKER)

Efficacy (technical and social)

(Related to calculability and technical skill valuation)

EF_1. Some say that a man born into a poor family will not better his condition even if he is ambitious and hard working. Do you think that such a man:

Will surely fail to get ahead/will probably fail/will probably succeed/will surely succeed.
Efficacy (1, 2, 3, 11, 16)

EF_2. Some say that accidents are due mainly to bad luck. Others say accidents can be prevented by sufficient care. Do you think prevention of accidents depends: entirely on luck/mainly on luck/mainly on carefulness/entirely on carefulness
Efficacy (1, 2, 3, 11, 16)

EF_3. Some say that getting ahead in life depends on destiny. Others say that it depends on the person's own efforts. Do you think the position a man reaches in life depends more on fate or more on one's own efforts.
Efficacy (1, 2, 3, 11, 16)

EF_4. A boy was fated not to succeed but he was very intelligent, capable hard working and eager to succeed. Despite what may be fated do you think he could succeed?
Completely/only partly/not at all

EF_5. Some people say that we Egyptians are great dreamers (big talkers) but we do not accomplish (do) very much.
Do you think this statement:
Is absolutely true/has much truth in it/ is not correct at all

EF_8. Some people like work, in which there are many times when a man must face hard decisions. Other prefer work in which it is not necessary to make hard decisions. What type of work would you prefer? One requiring:
Many decisions/only a few decisions/no decisions at all
(Responsibility Valuation)

EF_9. To improve the condition of life in this community some say the people must get together to help themselves. Others say that it will require the help of the government. What do you think?
To improve the community should the people rely:
On themselves alone/ mainly on themselves/mainly on the government/on the government alone
(Responsibility Valuation)

EF_11. Which is most important for the future of the country?
Write #1 next to the choice.

The hard work of the people/ good planning on the part of the government/ God's help/ Good luck
(Planning Valuation)
Efficacy (1, 2, 3, 11, 16)

EF_12. Which is the second most important?
Write #2 next to choice_____

EF_14. Learned men (scholars, scientists) are studying such things as genetic engineering and nuclear science. Do you think that these investigations/ studies are: all very good (beneficial/ All somewhat good (beneficial)/ all somewhat harmful/ all very harmful
Technical skill Valuation

EF_16. Some say that a boy should be easy going and accept things as they come along. Others say that a boy should always be striving to overcome obstacles as they arise. In your opinion should one teach a boy:
to accept all things as they come/ to accept most things as they come/ to try to overcome most obstacles/ to try to overcome all obstacles
Efficacy (1, 2, 3, 11, 16)

Growth of Opinion (Cultural): also from the frequency of don't knows and never thought about it

GO_2. (BI) Would you tell me what are the biggest problems you see facing the country?
Coded for:
1. number of themes/ problems
2. number of sub-themes and themes
3. number of words

(+Verbal Fluency)

GO_3. If we conducted this same interview with your wife, do you think your wife would have?
The same opinion as you do/ some opinions different from yours/ many opinions different from yours

GO_5. On most matters:
1. Do you think we ought to let the husband speak for his whole family, or
2. Should we be sure to get the wife's opinions also

Minority Opinion Valuation

GO_6. Suppose we talk to the other men in your town, how much attention should we pay to the common man as against the leaders?

Most attention to what the ordinary people of the town say/ equal attention to what the people and the leaders say/ most attention to what the leaders of the town say. Minority Opinion Valuation

GO_7. Some people say a boy should not insist on his own opinion if his group disagrees with him. Others say that a boy should hold to his own opinion even if the whole group disagrees with him.

In the face of disagreement with his group, should you teach a boy:
Always to go along with the group/ most times to go along with the group/ most times to hold to his own opinions/ always to hold to his own opinions.

GO_8. Do you think a man can be truly good without having any religion at all? Yes/ No

Information (Cultural Behavioral)

(+CO_1, MM_8)

IN_1. (BI) Now I would like to ask you about some people who have been in the news recently (important people). Would you tell me who Sarkozy is?
Country and office correct/ country only/ office only/ neither

IN_2. (BI) Would you tell me who Shafeiz is?
Country and office correct/ country only/ office only/ don't know
Information

IN_2x. (BI) Would you tell me who is Ghandi?
Country and office correct/ country only/ office only/ don't know
Information

IN_3. (BI) Would you tell me who is Ahmedi Nejad?
Correct country and position/ correct position but country only approximately right/ correct position only
Information

IN_4. (BI) Would you tell me who is Burlesconi?
Country and office correct/ country only/ office only/ don't know

IN_4x. (BI) Would you tell me who Nelson Mandela is?
Country and office correct/ country only/ office only/ don't know

IN_5 (BI) Now I would like to ask you where certain places are. First of all where is Siwa?
Correct country and region/ correct country only/ don't know

IN_6 (BI) Where is Washington/Warsaw? or
US/ Poland/don't know

Information

IN_7 (BI) Where is Moscow/Amsterdam?
Russia or Soviet Union/ don't know

IN_7x (BI) Where is Paris/London?
Correct/ incorrect

Mass Media (Cultural)

MM_5. How often do you usually get news and information from Newspapers?
Everyday/ few times a week/ occasionally/ never
How many do you read each day or per week? Ask rather about publication names

MM_6. Which two sources of information do you trust most in finding out the news, about what goes on in the world?
Coded for: type of source: newspapers, radio, television, satellite channels, internet, or friends.

MM_7. Which of the following would you trust (rely on) more to give the truth about a local event:
Your newspaper, radio, TV news or satellite station/ a close friend

MM_8. (BI) Would you tell me the name of some books? _____
Coded for:

1. Names of books
2. Kinds of books mentioned

Information

MM_9. All things considered, do you think that the (moral) influence of the internet on the people (of this country) is good, bad, or neither good nor bad.
The internet is a:
Good influence/ neither good nor bad influence/bad influence

MM_10 which one of these (following) kind of news interests you most?
Your home town or village/ world events/ the nation/ sports/ Cultural events/ accidents
MM_11 which is second in interest for you? _____
MM_12 which is next most in interest for you? _____

Openness to New Experience (social and cultural)

NE_1. Suppose you get along well enough (where you are now), earning enough to provide food and other necessities for yourself and your family, would you be willing to move to another place far from here where the language and other customs are different, if you could live twice as well there?

Move/ stay
Economic Aspirations

NE_2. Suppose you met a man who was very different from yourself. He was born in a different region, his customs are very strange, he has a different way of talking, and even a different religion, but he seems friendly.

1. Would you wish to get to know him well?
2. Would you just as soon not?

(New Experience)

NE_3. Do you like to meet new people or would you just as soon prefer to spend your time with people you already know?

Meet new people/ prefer people already known
(New Experience)

NE_5. If you were to meet a person who lives in another country a long way off, or such as Japan or Nigeria could you understand his way of thinking? NE_3

Yes/ no
(New Experience)

NE_6. (BI) what is the longest trip you have ever made as an adult?

From _____ to _____
Coded for:

1. Number of Kilometers
2. Relative location of destination from. (next state/neighboring country)

(New Experience)

NE_7. Which of the following is more true of you?

1. I would prefer to live my life in the village with only occasional visits to the big city
2. I would prefer to live my life in the big city with only occasional visits to the countryside or small towns

(Job Satisfaction/Industrial preference)

Particularism (social)

PA_54. From your experience, what do the people you know do when they have to see about some urgent matter?

1. Try to find a friend in the office or an acquaintance who has friends in the office.
2. see about the matter without looking for help

PA_55. Do you think that is:
Good/ bad/ neither good nor bad

PA_56. What would you do in such situation? _____.

Planning (technical)

(EF_11, TI_3, 4)

PL_1. I know a man who does not worry about what he will need to do in the days ahead; he just counts on being able to do each task as it comes up. What would you feel about this man?
Coded for:
1. approval/ disapproval
2. (BI) number of words

PL_3. In comparison with a man who just takes things as they come, do you think a man who plans and arranges things in advance will have:
Many less difficulties and problems/ somewhat less difficulties and problems/ the same number of difficulties and problems
(Planning Valuation)

PL_4. People are different in how much they like to plan and arrange their affairs in advance. Would you say that you yourself prefer: to plan ahead carefully in most matters/ to plan ahead only on a few matters/ more to let things come without worrying too much ahead.
(Planning Valuation)

PL_50. Some people say that those who are successful in life have generally made plans and arranged things in advance so they would turn out well. Others say that those who are successful in life had better luck than others. Do you think that in order to be successful in life it is:
Much more important to have good luck/ a little more important to have good luck/ a little more important to make plans
(Planning Valuation)

Social Class Stratification (social)

SC_2. Which of the following in your eyes, should carry the most weight in
Determining the respect a man deserves?
Coming from a high or distinguished family background/ having much money/ having much schooling

Education Valuation (AS_1, 2, 8, 9, 51, CI_13, SC_2)

SC_6. I have here a hill (show drawing). Imagine that this hill represents social positions of all the people in the country. This means that in the upper part of the hill are placed persons who have the highest social positions. In the middle are persons who have a middle social position, and in the lower part are those persons who have lower social position. Is it easy or hard for a man to change his position upward on the hill?

Easy/ hard
(OPTIMISM)

SC_8. In your opinion, which of the following is more important to getting ahead in life?

Strength of family connection/ own ability and hard work

SC_9. All things considered and compared with most of the people in this country, how has life been to you?

More fair/ as fair/ less fair
OPTIMISM/ SOCIAL SATISFACTION

SC_10. Why do you say that? _____

Probe once. What other reasons? _____
Economic Aspirations

Ask respondent to please complete the following sentences in his own words:

Sentence Completion Test (cultural)

ST_5. When offered more responsible work, the man _____
(Responsibility Valuation)

ST_6. If his work materials or tools are not available, the man _____
(Responsibility Valuation)

Time Valuation (technical and social)

TI_3. Suppose you had hired a man to work for you. Would you rather:

1. Set a fixed daily schedule for him
2. Allow him a little freedom to set his own daily schedule
3. Leave the daily schedule mostly up to him so long as he finished the job

(Planning Valuation)

TI_4. Some people say that a factory should be run with a strict time schedule of work. Others think there should be less concern with time in a factory. Do you feel that having a strict time schedule in a factory in general is:

Good and necessary/ a pity, but necessary/ bad and unnecessary

(Planning Valuation)

TI_5. Suppose a friend who said he would meet you at noon did not come right on time, how long would it be before you would consider him to be a little late?

-Try to get a response in terms of minutes or parts of an hour.

(Responsibility Valuation)

TI_7. Some people say that it is alright for a boy to fail to keep some appointments/ deadlines or be on time, since that is only natural in a boy. Others say that a boy should be taught to keep his appointments and to always be on time.

If a boy fails to keep some of his appointments, should we consider it excusable: Always/ most times/ few times/ never

(Responsibility Valuation)

Technical Skill Valuation (technical)

(Also about distributive justice, tied to both efficacy and calculability)

TS_12. Suppose there is a man who has a little shop /factory and he produces nails. Things have gone well and he has saved some money. Now he wants to expand his business.

Which would get greater output?

1. To hire more workers than previously, or
2. 2. to give the present workers extra training

TS_14. Some people say that it is not too important for a boy to be skillful (handy) with machines and interested in mechanical things. Others say that every boy should be skillful with machines and interested in mechanical things. Assuming he has other abilities, how important is it that a boy also (be skillful with machines and) have mechanical interest?

Not at all important/ perhaps a little/ very important/ the most important thing for a boy

Understanding Production (technical)

UN_1. (BI) There are several ways to determine how much should be paid to a worker in a factory. Many factories pay according to the number of children, but most of them pay workers according to their degree of skill and production. Why do most factories pay according to skill and not according to the number of children?

1. Management pays the workers and has the legitimate right to make the rules
2. Skilled workers are hard to find, so they must be offered more to attract them

3. Paying according to children would be unfair to the unmarried workers

UN_2. (BI) The manager of a factory does not like the foremen to be too friendly with the workers under him. Why is that?

1. Management does not want to encourage disrespect for authority
2. the factory is a place to work not to socialize
3. Foremen can more easily maintain discipline if they are not too friendly with the workers

UN_3. At a certain foundry the management does not have a man do several different jobs but instead, asks him to do one simple job over and over again. Why is that?

1. The iron can be made more efficiently that way
2. so that the workers can earn more money
3. Management runs the factory and has the right to arrange the work

Work Commitment (technical and social)

WC_2. Do you prefer to remain a factory worker, or would you prefer to do some other kind of work? If other, ask:

What kind of work would you prefer?
Coded for:

1. (BI) Job classification
2. Level of occupational aspirations

WC_9. Which do you think is better?

Work as a farmer/ work in a factory/ work in a firm
(Job Satisfaction/industrial preference)

WC_10. Why do you think that? _____

(+verbal fluency)
(Job Satisfaction/industrial preference)

WC_11. What are the advantages of each? _____

Please probe for distinct reasons for preference.
For farm/ for factory/ for firm
(+verbal fluency)
(Job Satisfaction/industrial preference)

WC_12. What are the disadvantages of each? _____.

Please probe for distinct reasons for preference
For farm/ for factory/ for firm
(+verbal fluency)
(Job Satisfaction/industrial preference)

WC_55. Where do you think opportunities of advancement are better?
Factory/ farm/firm/same
(Job Satisfaction/industrial preference)

Women's Rights (social and cultural)

(+CH-6 and CH_7)

WR_3. (BI) There are some husbands who discuss things with their wives that other husbands do not. In general do you discuss work with your wife?
Often/ once in a while/ not at all

WR_4. (BI) In general do you discuss politics with your wife?
Often/ once in a while/ not at all
Minority Opinion Valuation

WR_7. Suppose in a factory or office both men and women did exactly the same sort of work, what should be the pay they receive?
It should be equal/ Men should get a little more/ men should get quite a bit/ men should get quite a bit (lot) more
Women's Right (7, CH-6 and CH_7)

Appendix C

Questions Related to Factory and Management Quality

The Company's Vision and Mission

MGMT_1 What is the vision and mission of the institution? Is it documented somewhere? Is it well revealed publicized to the workers? (Ask to see)
Code for documentation and communication

MGMT_2 Where does it include the development of its workforce as a principal ingredient? _____
Coded for : inclusion of worker development as a principal element vs a peripheral element

Leadership and Governance Indicators

LEAD(HRD)_1 What Are the programs adopted for worker training and development?: Existing programs, operationalized and effective/existing, operationalized but ineffective/ not existing

LEAD(HRD)_2 Does any of these programs deal with encouraging workers at all levels to research and disentangle production problems? Yes/no

LEAD(HRD)_3 Which of these programs is intended to perform these functions? _____
Coded for: the existence of such program

LEAD(HRD)_4 Which program supports innovation and creative initiatives?_____
Coded for:the existence of such program

LEAD(HRD)_5 Do these programs make use and promote the use of advanced industrial and administrative technology? Such as which?
Coded for the number of advanced equipment and technological means used

LEAD(ENV)_6 Can we say that the work environment supports worker learning and development? How is that? Yes/no
Coded for number of justifications

LEAD(ENV)_7 What are the work benefits provided for workers here?
Coded for: 1. the number of available benefits
2. rating in relation to other factories' benefits

LEAD(ENV)_8 Is there an adopted scheme to monitor workers' development work environment? What is it? _____

Coded for: 1. its existence 2. its operationalization

LEAD(ENV)_9 What is the adopted approach to limit worker turnover and absenteeism?

_____

Coded for 1. its existence 2. effectiveness

LEAD(ENV)_10 What is the system you follow for the appraisal of worker performance and taking necessary action when it so calls for?_____

Coded for: 1. its existence 2. its application

LEAD(ENV)_11 Do you have any programs that espouse team work and motivate it?

Coded for: 1. existence 2. application

LEAD(ENV)_12 What are the necessary measures for reinforcing communication between the different organizational levels? Can you see that it is any effective?_____

Coded for: 1. existence 2. how effective

LEAD(GOV)_13 Can we say that the governance practices, namely in planning and decision-making in the factory are sound? How is that?

_____

Coded for: 1. yes/no 2. number of grounds

LEAD(GOV)_14 How do you warrant equality, transparency and distributive justice between workers?_____

Coded for: 1. existence 2. number of aspects

LEAD(GOV)_15 is this style clearly reflected in the factory's basic regulations? Yes/no

LEAD(GOV)_16 What is the standard procedure for worker complaints and/or suggestions? How seriously are these usually considered? Can you give examples? _____

Coded for: 1. existence 2. applied/not applied

LEAD(AD-FIN)_17 Are there budget segments effectively employed to the actual human resource development plan?

Coded for: 1. yes/no 2. percentage allocated

LEAD(AD-FIN)_18 What is the system adopted for the fair allocation of accountability and/ or liability on an individual as well as on a collective basis? Is it applicable in reality?

Coded for: 1. its existence 2. its effective use

LEAD(AD-FIN)19 How do you carry out responsibility allocation and division of labor?
Coded for system modernity

Physical and Human Resource Indicators

PHYS/HR(S&D) _1 Do you have a system for HRD and SD in the factory?
Coded for its modernity

PHYS/HR(S&D) _2 How do you monitor and evaluate human resource allocative efficiency? How often is it carried out?

_____

Coded for: 1. its existence 2. its span of application

PHYS/HR(PHYS)_3 Do you think the factory has got the modern equipment, machinery and tools necessary to operationalize development goals?
The most technologically advanced/fairly technological/ traditional machinery and equipment could do the job

PHYS/HR(PHYS)_4 where do you keep the operation manuals? Are these at worker disposal? How? Are they effectively of any use?
Coded for: 1. their existence 2. Worker disposal and proximity
3. whether actively in use

PHYS/HR(PHYS)_5 can you say that your IT infrastructure and databases are available for general use, for workers to use for their work? How is that?
Coded for: 1. yes/no. 2. frequently/sometimes/never

PHYS/HR(PHYS)_6 are there regular schedules for equipment maintenance, worker training and technical support? (ask to see)
As you see it, how often are these schedules followed?
Coded for: 1. there existence 2. effective implementation

PHYS/HR(PHYS)_7 in general, how much available are financial resources, allocated for HR goal achievement? Would you wish it was a little more than the actual assigned amount? Was the assigned amount affected by the actual economic crisis?

_____

Suitably available/somewhat suitable/difficulties concerning cash flows are everywhere these days

PHYS/HR(FACTORY)_8 have you acquired any international documented quality certificate such as for quality or standardization?

_____

Coded for: 1. its existence 2. how many

PHYS/HR(FACTORY)_9 what are safety measures in the factory in general?
Were similar measures considered when factory layout was decided?
Coded for: 1. its existence 2. how many

PHYS/HR(FACTORY)_10 Together with the general factory structure, How does the factory layout efficiently caters for the different production functions? (probe for proof of existing relationship)
relationship exists/ no relationship

Quality Assurance and Accountability

Q&A (DEV)_1 can you say that there is an internal quality assurance strategy in light of the organization's vision and mission? (ask to see)
coded for existence of the strategy

Q&A (DEV)_2 is there a regular self appraisal routine, built upon the relative indicators and measures? (ask to see)
coded for existence

Q&A(DEV)_3 do you have a consecutive plan to seek and respond to external appraisals (ask to see) yes/no

Q&A(T&D)_4 Does the HR department activate quality assurance programs? How is That carried out? (ask to view)

_____
Coded for: 1. yes/no 2. mirrors the firm's vision and mission

Q&A(T&D)_5 Does the HR unit devise clear applicable plans to monitor self appraisal and continuous development procedures in light of the firm's vision and mission, in what concerns worker development?

_____
Coded for: 1. yes/no, 2. reflects HRD measures

Q&A(T&D)_6 does the HR unit follow its own self appraisal scheme to monitor the effects of its programs on worker development? How does it work? (ask to view). Coded for: 1. yes/no, 2. its application

Q&A(T&D)_7 Does it cooperate with external HRD and training institutions in order to Provide its own workforce with the best the market can offer in the field of training and development? How is that? (ask to view documents)
Coded for: 1. yes/no, 2. its effectiveness

Work Environment

WE(DEV)_8 is the factory's work environment supportive of learning and development?
How is that? (ask to view verification).
Coded for: 1. yes/no 2. how many reasons

WE(DEV)_9 Is there a mechanism of industrial psychological and social guidance for Workers? How does it work? (probe for proof)
Coded for: 1. its existence, 2. its effectiveness

WE(ETH)_10 The pattern of human relations that prevails among workers and between them and their supervisors and managers is built upon:
cooperation and mutual respect/ each keeps to himself/ fair copetition and each races to please his superiors

WE(ETH)_11 How much do workers have a sense of belongingness to the organization
A strong sense of belongingness/somewhat belonging to the factory/belongingness is usually a rare sentiment

WE(ETH)_12 Workers abide by factory rules and regulations:
All the time/to a great extent/sometimes/unfortunately they rarely do

WE(ETH)_13Workers internalize ethical work values:
All the time/to a great extent/sometimes/unfortunately they rarely do

Managers' Attitudes

MA_1 How valuable would a worker's initiative be as a contribution to production increase? _____

MA_2 Is it really vital to inform workers ahead of time as of changes in the flow of production planned by management?
Yes/no
Why do you think that way?

MA_3 How much attention should one pay to the workers' feeling?
Much attention/moderate attention/not much attention

Workers' Control

WCL_1 How often do you make use of such programs as time and motion studies by Factory management. Coded for: 1. its use, 2. its frequency

WCL_2 How much can you say of worker contribution in the formal production process? Great extent/moderate contribution/rare contribution

WCL_3 How do you rate your workforce quality?
In what concerns: 1. age, 2. skill, 3. education

Researchers' notes

About the nature of the factory's workforce:
1. age, 2.skill, 3.education

Appendix D

Tentative Independent Variables

Scored also as 1 and 2 for all independent variables adding them up for a total sum out of (their number) times (2)

Then Compare Exposure scale vs. Development scale

1. **Personal and family characteristics**:
   Life cycle stage comprising age, marital status and number of children

2. **origin**: Rural vs. urban origin

3. **Years Urban since age 15**: For workers of rural origin

4. **socio-economic status**:
   Economic level from a combination of self reported income and self reported consumer-goods possessed

5. **Information-media exposure**:
   Newspaper reading combined with Television viewing

6. **Factory character/ nature of present factory**: A combined index of the rated modernity of the factory,

7. **Occupational characteristics/ Individual Factory Experience:**
   A combination of a worker's total months of factory experience, the number of factories he worked in. [New factory workers/ middle experienced/ high experienced].

8. Independent Variables Related to **Factory and Management Indicators**
   (The company's Vision and Mission+ managers' attitude+ worker control+ work environment make one indicator related to general managerial disposition)*

   **Follows management indicators with their respective questions*

Detailed Management Indicators and their Relative Management Interview Questions

Company's Vision and Mission

A. There is a clear and publicized vision and mission for the institution (102/MGMT_1)

B. clearly stated for workers (104, 105) (MGMT_1)

C. includes the development of its workforce as a principal ingredient (101,106,107) (MGMT_2)

Leadership and Governance Indicators

A. Adopting effective worker skill and career development schemes

1. Management implements effective training and HRD functions (108/Lead-hrd1, 420,421,422)

2. encourages workers at all levels to research and disentangle production Problems (109/Lead-hrd2, 110/Lead-hrd3, 111/Lead-hrd3)

3. Supports innovation and creative initiatives (112/Lead-hrd4)
4. Promotes the use of advanced industrial and administrative technology (113/Lead-hrd5)

B. Supporting a healthy work environment to human capital accumulation

1. supports a learning and developing work environment(115,116/Lead-env6/)

2. Work Benefits provided(117/Lead-env7,423,)

3. adopts a scheme to monitor workers' development work environment(118,119,120/Lead-env8)

4. adopts an approach to limit worker turnover and absenteeism (121,121a/Lead-env9)

5. follows a system to appraise the performance of workers and take necessary action (122/Lead-env10)

6. espouses team work and motivates it (123,124/Lead-env11)

7. reinforces communication between the different organizational levels(125,126/Lead-env12)

C. Pursuing sound governance practices

1. Pursues a democratic management style in planning and decision making(128/Lead-gov13)

2. follows equality, transparency and distributive justice between workers(129/Lead-gov14)

3. This style is clearly reflected in the factory's basic regulations(130/Lead-gov15)

4. Attentive to worker complaints and/ or suggestions of betterment(131,132,133/Lead-gov16)

D. Existence of modern administrative and financial directives

1. employs budget segments effectively to the actual institutional development plan (134,135/Lead-adfin17)

2. applies an advanced system for the fair allocation of accountability and/ or liability on an individual as well as on a collective basis (136,137/Lead-adfin18)

3. Follows a modern system of responsibility allocation and division (138,139,140/Lead-adfin19)

Physical and Human Resource Indicators

A. Human resource sufficiency and development

1. Effective HRD and Selection policies (417,418,419)

2. Employs Training and SD systems (201,202/Phys-hrsd1,425)

3. Provides external/foreign exposure (512,513,514,515,517,518,519,520)

4. continuously monitors and evaluates human resource allocative efficiency (203,204,205/phys-hr-sd2)

B. Physical resource adequacy and development

1. owns modern equipment, machinery and tools necessary to operationalize development goals (206/Phys-hrph3)

2. Operation manuals at worker disposal, effectively in use(207,208,209,210/Phys-hrph4)

3. availability of IT infrastructure and databases for general use(211Physhrph5)

4. availability of a regular schedule for equipment maintenance and worker training and technical support(212,213,214/Phys-hrph6)

5. availability of financial resources suitable for goal achievement(215,216,217/Phys-hrph7)

C. Factory premises appropriateness

1. Factory structure features adequate mechanical, industrial and engineering specifications(218,219/Phys-hrfac8)

2. Factory building accounts for necessary called for safety measures(220/Phys-hrfac9)

3. Factory structure and layout efficiently and safely serves production functions(221/Phys-hrfac10)

Quality Assurance and Accountability

A. Continuous advancement and development

1. The existence of an internal quality assurance strategy in light of the organization's vision and mission(301/QA-dev1)

2. adopts a regular self appraisal routine built upon the relative indicators and measuresand takes action accordingly (302/QA-dev2)

3. continuously looks out for and responds to external appraisals(303/QA-dev3)

B. Effectiveness of the training and development unit

1. HR department activates quality assurance programs(304/QA-td4)

2. devises clear applicable plans to monitor self appraisal and continuous development procedures in light of the firm's vision and mission(305,306/QA-td5)

3. follows its own self appraisal scheme to monitor the effects of its programs on worker development(307/QA-td6)

4. cooperates with external HRD and training institutions in order to provide workers with the best training available on the market(308/QA-td7)

Work Environment

A. the work environment is supportive of learning and development
   1. supports learning and development as dictated by the company's vision and mission (401/WE-dev8)
   2. Availability of a mechanism of industrial psychological and social guidance for workers (402/WE-dev9)

.

B. the work environment is conducive to institutional ethical associations
   1. a pattern of human relations built upon cooperation and mutual respect prevails among workers and managers (403/WE-eth10)
   2. an atmosphere supportive of belongingness to the organization and of abiding by the factory rules and ethical values (404,405,406/WE-eth11, WE-eth12, WE-eth13)

Managers' Attitudes

A. How valuable would a worker's initiative be as a contribution to production increase? (407/MA-1)

C. Is it really vital to inform workers ahead of time as of changes in the flow of production planned by management? (408,409/MA-2)

D. How much attention should one pay to the workers' feeling? (410/MA-3)

Workers' Control

A. Use and frequency of time and motion controls by management(411/WCL-1)

B. Worker contribution in formal production(412/WCL-2, 424)

Workforce Quality

A. Age (413/WCL-3)

B. Skill (414/WCL-3)

C. Education(415/WCL3)

D. Residence

Supervisors' Quality (His Worker Questionnaire and his Arithmetic Test)

E. Age group

F. Skill level

G. Education

Set of Independent Variables Used

Scored also as 1 and 2 for all independent variables adding them up for a total sum out of (their number) times (2)

Then Compare Exposure scale vs. Development scale

1. **Personal and family characteristics**:
   Life cycle stage comprising age, marital status and number of children

2. **Occupational characteristics/ Individual Factory Experience:**
   A combination of a worker's total months of factory experience, the number of factories he worked in. [New factory workers/ middle experienced/ high experienced].

3. **Independent Variables Related to Factory and Management Indicators:**

   General Managerial disposition: (The Company's Vision and Mission+ managers' attitude+ worker control+ work environment make one indicator related to general managerial disposition)

   Factory Modernity: (Leadership and Governance Indicators + Physical and Human Resource Indicators)

   Workforce Quality

   Supervisors' Quality (His Worker Questionnaire and his Arithmetic Test)

Appendix E

Observation List

1. Rated modernity of the factory:
   Factory premises, Infrastructure, equipment, Safety measures, Work environment

2. Factory physical size

3. Work environment/psychosocial climate

4. Nature and type of management

5. Nature and type of organizational structure

6. Rated modernity of management practices

7. Managers' attitude

8. Supervisors' attitudes

9. Perceived number of benefits, worker satisfaction

10. Workforce: size, nature (age and background) and composition

11. Workforce quality: skill, education, workmanship, work stability

12. Most of the questions/items concerning factory and management rating depend a great deal on observation, which is warranted in the questions asked and the coder probing for verification

Observation List

- **ملاحظة حداثة ومدى تطور المصنع :**
  - الموقع وطبيعة المبنى .
  - مقاييس الأمان .
  - البنية التحتية .
  - بيئة العمل .
  - الآلات والأجهزة .
- الحجم الفعلى للمصنع .
- البيئة الاجتماعية للعمل الجو النفسى الاجتماعى .
- طبيعة ونمط الإدارة .
- طبيعة ونمط الهيكل التنظيمى .
- تصنيف حداثة أسلوب الإدارة .
- موقف وسلوك المديرين .
- موقف وسلوك المشرفين مشرفى الإنتاج
- مزايا العمل من ناحية العامل ورضاه عنه .

0 - خصائص العمالة بشكل عا :

- حجمها .
- طبيعتها السن والخلفية) وتكوينها .

1 - جودة العمالة :

- المهارة .
- التعليم .
- البراعة وجودة الصنعة .
- نسبة الاستقرار فى العمل .

2 - معظم الأسئلة المختصة بطبيعة الإدارة وموقفها وموجهة بشكل خاص للمديرين ومشرفى المصنع يعتمد كل منها بشكل كبير على الملاحظة حيث يتم ذلك بعد كل سؤال عن طريق استقصاء السائل عن كيفية تحقيق الإجابة وإثباتها .

Appendix F

Worker Evaluation Sheet

ديسمبر 2009

إسم المصنع:

المسلسل : إسم المبحوث : كود : الحالة :

أولا ملاحظات الباحث

التقدير: 1 2 3 4

ملاحظات الباحث عن المبحوث:

.....

.....

.....

.....

ثانيا ملاحظات المشرف

تقدير المشرف لمصنعية المبحوث في العمل الحالي: 1 2 3 4

ملاحظات المشرف:

.....

.....

.....

.....

تقدير المشرف لقدرة المبحوث على التعلم : 1 2 3 4

ملاحظات المشرف:

.....

.....

.....

.....

تقدير المشرف لإستعداد المبحوث على تحمل المسئولية: 4 3 2 1

ملاحظات المشرف:

.....

.....

.....

.....

تقدير المشرف لمقدرة المبحوث على قيادة أخرين: 4 3 2 1

ملاحظات المشرف:

.....

.....

.....

.....

تقدير المشرف من الأستقرار والإلتزام للمبحوث: 4 3 2 1

ملاحظات المشرف:

.....

.....

.....

.....

Appendix G

Tabulated Checked Management and Factory Indicators

Table 1 Company's Vision and Mission

	Arctec Inc.	Autotex	Exilar Egypt	Total
clearly stated for workers				
Exists(104/MGMT_1) Place :(105/MGMT_1)	×	×	√	1
Obvious in plain sight	×	×	×	×
Semi-manifest	×	×	√	1
Barely manifest for workers	×	√	×	1
Not manifest for workers	√	×	×	1
Includes development of its workforce as a principal ingredient Principal/secondary (107/Mgmt-2)				
secondary factor	×	√	√	2
Essential factor	√	×	×	1
Total	1	1	1	3

Table 2 Leadership and Governance Indicators

	Arctec Inc.	Autotex	Exilar Egypt	Total
Worker Skill and Career Development Schemes				
Training and HRD functions (108/Lead-hrd1)				
Operationalization				
Programs exist but not applied	×	×	×	×
Programs exist and applied only for supervisors	√	×	×	1
Programs exist and applied for workers and supervisors	×	√	√	2
Effected program protocols (420)				
Collective (3+)	×	×	√	1
Individual/ trainer	×	×	√	1
Training (421)				
Theoretical	×	×	×	×
Applied	√	×	×	1
Both theoretical and applied	×	√	√	2
Post-training appraisal(422)				
Another test (3+) or (A+B+C)	×	√	√	2
Official evaluation	×	×	√	1
Official trainer evaluation	√	×	√	2
Unofficial trainer evaluation	√	√	√	√
Programs for Innovation and creative initiatives(112/Lead-hrd4)	√	×	√	2
Work Environment for Human Capital				
Environment for learning and development				
Degree of support (115/Lead-env6/)				
High	×	×	√	1
Adequate	√	√	×	2
Bare	×	×	×	×
Number of justifications (116/Lead-env6/)				
1 (2+=2)	√	×	×	1
3	×	√	×	1
4	×	×	√	1
Work Benefits				
Average worker income (423)	750	900	575	688.4
Monitoring for development				
System Exists (118/Lead-env8)	√	×	√	2
Number of tools (119/Lead-env8) (3+)=(2)				
1	√	×	×	1
4	×	×	√	1
Operationalization (120/Lead-env8)	√	×	√	2

Limit worker turnover Effectiveness (121a/Lead-env9) Ineffective	√	×	×	1
Effective	×	√	√	2
Appraisal for action (122/Lead-env10) Tools				
Qualification/training matrix	√	×	√	2
Worker evaluation for regular raises and rewards	√	√	×	2
Number of tools	1	1	1	
Total number of respondents who have tools for appraisal	1	1	1	3
Fostering Teamwork				
Programs exist /work itself revolves around teamwork (123/Lead-env11)	×	√	√	2
Effective (124/Lead-env11)	×	√	√	2
Total number of respondents who value teamwork	×	1	1	2
Democracy in planning & decision-making				
In effect (127/Lead-gov13)	×	×	√	1
Number of manifestations (128/Lead-gov13) 4	×	×	√	1
Total number of respondents who have democracy in planning & decision-making in effect	×	×	1	1
transparency and distributive justice (129/Lead-gov14)				
Existing	×	√	√	2
Total number of respondents who have transparency and distributive justice tools	×	1	1	2
Systemized/documented in factory's basic regulations (130/Lead-gov15)	×	×	√	1
Total number of respondents whose transparency/distributive justice systemized and documented in factory's basic regulations	×	×	1	21
Researcher's view (133/Lead-gov16)				
Yes, for suggestions only	√	×	√	2
Yes, for complaints and suggestions	×	√	×	1
Effective Administrative and financial Directives				
budget segments for institutional development plan				
Exists (134/Lead-adfin17)	√	×	√	2
% of Total expenditure budget (135/Lead-adfin17) 5%+				
1	×	×	√	50.0
8	√	×	×	50.0

Total number of respondents where budget segments for institutional development plan exists	1	×	1	2
System for fairly allocated responsibility and division of labor				
Modern (139/Lead-adfin19)	×	×	√	1
Promotion directives: (140/Lead-adfin19)				
Qualification matrix (A+B)	√	×	√	2
Supervisor's recommendation	√	√	√	√
As needs arise	√	√	√	√
According to seniority	×	√	×	1
Total	1	1	1	3

Table 3 Resource Indicator (Physical and Human)

	Arctec Inc.	Autotex	Exilar Egypt	Total
Human resource sufficiency and development				
Effective HRD and Selection policies				
Existence of an entrance test (418)	×	√	√	2
Employs Training and SD systems				
HR development scheme (201/Phys-hrsd1)				
Exists/modern (AorB)	×	×	×	×
Exists/traditional	×	√	√	2
Does not exist	√	×	×	1
Skill development scheme (202/Phys-hrsd1)				
Exists/modern (AorB)	×	×	√	1
Exists/traditional	×	×	×	×
Does not exist	√	√	×	2
Provides external/foreign exposure				
How many/year (513) (5+)				
2	×	√	×	1
10	√	×	√	2
Periodical span (514)				
Monthly (5-)	×	×	√	1
Every 2 months	√	×	×	1
Every 3 months	×	×	×	×
Every 6 months	×	√	×	1
Every 9 months	×	×	×	×

With arrival of new machine	×	×	×	×
Training workers in Egypt (425)	√	×	×	1
Monitoring and evaluating of human resource allocative efficiency				
Tools (204/phys-hr-sd2)				
Qualification/technical matrix	√	×	√	2
Bi-annual factory's performance evaluation	×	√	×	1
Supervisor's discretion				
Time span (205/phys-hr-sd2)				
Frequent	×	√	√	2
Occasionally	√	×	×	1
Physical resource adequacy and development				
Owns modern equipment, machinery and tools necessary to operationalize development goals (206/Phys-hr-ph3)				
Most modern (AorB)	×	×	×	×
Quite modern	√	×	√	2
Traditional	×	√	×	1
Operation manuals at worker disposal, effectively in use				
Available for workers' consultation (208/Phys-hrph4)	×	×	√	1
Frequently used by workers (209/Phys-hrph4)	×	×	√	√
Workers observed to use them (210/Phys-hrph4)	×	×	√	√
Total number of respondents where Operation manuals are frequently used by workers	0	0	1	1
Factory structure and layout efficiently and safely serves production functions (221/Phys-hrfac10)				
Efficient	×	√	√	2
Adequate	√	×	×	1
Total	1	1	1	3

Table 5 Work Environment

	Arctec Inc.	Autotex	Exilar Egypt	Total
Work environment supportive of learning and development				
Supports learning and development (401/WE-dev8) (AorB)				
Full support	×	×	√	1
Average support	×	√	×	1
No support	√	×	×	1
Compliance to rules and regulations (405/ WE-eth12)				
Always (AorB)	×	×	×	×
To a great extent	×	√	√	2
Sometimes	√	×	×	1
Rarely	×	×	×	×
Total	1	1	1	3

Table 6 Managers' Attitudes

	Arctec Inc.	Autotex	Exilar Egypt	Total
Workers' initiatives' contribution to production increase (407/MA-1)				
Direct contribution	×	×	√	1
Indirect contribution	√	√	×	2
Informing Workers ahead of time of changes in planning and in production flow				
Important (408/MA-2)	×	×	√	1
Attention to pay to workers' feelings (410/MA-3)				
Always healthy to be attentive	×	√	×	1
Sometimes healthy	√	×	√	2
Total	1	1	1	3

Table 7 Worker's Control

	Arctec Inc.	Autotex	Exilar Egypt	Total
Use and frequency of time and motion controls by management (411/WCL-1) (no)				
Practice "using time and motion controls by management"	√	×	√	2
Number of respondents who use time and motion controls by management	1	0	1	2
Worker contribution in formal production (412/WCL-2)				
Greatly	×	×	√	1
Medium level contribution	√	√	×	2
Total	1	1	1	3

Table 8 Supervisors Caliber

	Arctec Inc.	Autotex	Exilar Egypt	Total
Cultural Theme	61.0	66.0	62.0	63.0
Technical Theme	72.0	78.0	72.0	74.0
Social Theme	71.0	90.0	65.0	75.3
Total	68	78	66.3	70.8

Appendix H

Preliminary Tabulated Percentage Worker Responses

2. Calculability and Trust

Table 2 Calculability and Trust

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Meeting someone for the first time (CA-6, 501)								
Be cautious about trusting him until you know him better	100.0	90.0	91.7	92.3	97.4	100.0	96.7	95.1
Not trust him because he may take advantage of you	0.0	10.0	8.3	7.7	0.0	0.0	1.7	4.9
Trust him until he proves to be not worthy of that trust	0.0	0.0	0.0	0.0	2.6	0.0	1.7	0.0
Relatives take advantage of you (CA-7, 502)								
Good chance	44.4	40.0	33.3	30.8	28.2	27.8	31.7	31.7
Little chance	33.3	30.0	50.0	23.1	43.6	50.0	43.3	36.6
No chance	22.2	30.0	16.7	46.2	28.2	22.2	25.0	31.7
When buying you get honest weight and goods not adulterated (CA-8, 503)								
Never	0.0	0.0	8.3	7.7	15.4	22.2	11.7	12.2
Only at times	77.8	80.0	58.3	61.5	46.2	44.4	53.3	58.5
Most of the time	11.1	20.0	16.7	30.8	30.8	33.3	25.0	29.3
Always	11.1	0.0	16.7	0.0	7.7	0.0	10.0	0.0
Total	9	10	12	13	39	18	60	41

CA_6: When meeting new people for the first time, being cautious about trusting them until he knows them better, is scored favorable, rather than not trusting at all or on the other hand trusting them promptly. The two extremes are not favored.

CA_7: Whoever believes that there is a god chance his own relatives would take advantage of him, if they know a lot about his private life, is the favored answer. In both questions, being calculable as opposed to naïve is scored a 2.

CA_8: Whoever is confident that when he buys from merchants, he either always or never gets the honest weight, or goods that are not adulterated, is scored 1, whereas whoever handles this matter relatively and cautiously, in a moderate realistic way, would be favored.

3. Change Valuation

Table 3 Change Valuation

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Change of line of work (CH-1.413)								
Changes very much	11.1	20.0	8.3	7.7	12.8	33.3	11.7	22.0
Changes a little	44.4	40.0	41.7	15.4	56.4	44.4	51.7	34.1
Mostly stays the same	22.2	20.0	25.0	30.8	20.5	11.1	21.7	19.5
Stays exactly the same	22.2	20.0	25.0	46.2	10.3	11.1	15.0	24.4
Opinion in change in line of work (CH-2, 414)								
Advantage	80.0	83.3	33.3	66.7	81.5	100.0	73.7	91.3
Disadvantage	20.0	16.7	50.0	33.3	7.4	0.0	15.8	8.7
Doesn't matter	0.0	0.0	16.7	0.0	11.1	0.0	10.5	0.0
Government attention (CH-12, 313)								
Increasing rapidly	22.2	30.0	16.7	15.4	2.6	0.0	8.3	12.2
Decreasing greatly	44.4	20.0	58.3	61.5	61.5	66.7	58.3	53.7
Remaining the same	33.3	50.0	25.0	23.1	35.9	33.3	33.3	34.1
Feeling about that (CH-13, 314)								
Good thing	33.3	40.0	25.0	7.7	2.6	5.6	11.7	14.6
Bad thing	66.7	60.0	75.0	92.3	97.4	94.4	88.3	85.4
Economic situation (CI-52. 504)								
Total change	77.8	40.0	83.3	53.8	74.4	61.1	76.7	53.7
Partial change	22.2	60.0	16.7	30.8	25.6	33.3	23.3	39.0
No need to change	0.0	0.0	0.0	15.4	0.0	5.6	0.0	7.3
Total responds to the opinion in change in line of the work (Q.414)	5	6	6	3	27	14	38	23
Total	9	10	12	13	39	18	60	41

CH_1: Whoever thinks that his line of work changes at a quick (very much) from time to time, is scored a 1, namely because he does seem thru his response uncomfortable with it, and because, in the three factories changes have not been that rapid. All other responses are scored a 2, feeling bored or wishing it would be more rapid.

CH_2: Moreover, following own response with dissatisfaction would more readily grant the respondent an extra score of 2.

CH_12: Along the same line, asking about his opinion about the rate of change in government attention to the ordinary man, whoever thinks it is remaining the same would

readily receive a 2, feeling uncomfortable about the stagnation; than those who think it is too much whether decreasing or increasing, feeling uncomfortable about the change.

CH_13: To cancel out any bias in the previous response rating, whoever felt the nature and rate of change to be bad again scored a solid 2.

CI_52: Whoever thought that to ameliorate the country's economic conditions, nothing should change, got a 1, while whoever thought other wise, got a 2.

4. Consumerism and Consumption Attitudes

Table 4 Consumerism and Consumption Attitudes

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Owning								
I-Pod/MP3 (CO-2, 505b)	12.5	14.3	12.5	8.3	8.3	23.5	9.6	16.7
Total	8	7	8	12	36	17	52	36
DVD (CO-5, 505b)	25.0	11.1	27.3	18.2	7.9	5.6	14.0	10.5
Total	8	9	11	11	38	18	57	38
Wishing to own								
I-Pod/MP3 (CO-3, 505c)	14.3	16.7	14.3	45.5	15.2	30.8	14.9	33.3
Total	7	6	7	11	33	13	47	30
DVD (CO-6, 505c)	33.3	50.0	37.5	55.6	40.0	52.9	38.8	52.9
Total	6	8	8	9	35	17	49	34
Man's happiness (CO-9a, 509a)								
Possessing things	0.0	60.0	16.7	23.1	7.7	16.7	8.3	29.3
Other things beyond this	100.0	40.0	83.3	76.9	92.3	83.3	91.7	70.7
Total	9	10	12	13	39	18	60	41

CO_2 and CO_5: Whoever owned either a I-Pod/MP3 or a DVD, were scored as favorable, as opposed to those who did not.

CO_3 and CO_6: On another note, those who did not own any of the two gadgets, but wished to own either, would earn a 2 score for favorability.

CO_9a: Those who thought that man happiness is not confined to ability to obtain material things, rather on things beyond that would score a 2 as opposed to the rest.

5. **Dignity Valuation**

Table 5 Dignity Valuation, Awareness of and Respect for the Other

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Attitude towards worker mistakes causes a big loss (DI-5, 417)								
Criticize him mildly	33.3	70.0	33.3	53.8	43.6	27.8	40.0	46.3
Criticize him sharply but quietly	44.4	30.0	66.7	38.5	48.7	55.6	51.7	43.9
Bawl him out good and loud	33.3	70.0	33.3	53.8	43.6	27.8	8.3	9.8
Attitude towards housewife spending more than family income (DI-6, 327)								
Just call it to her attention again	22.2	40.0	33.3	53.8	53.8	38.9	45.0	43.9
Give her a good talking	66.7	0.0	41.7	30.8	28.2	22.2	36.7	19.5
Bawl her out strongly	11.1	10.0	0.0	0.0	2.6	5.6	3.3	4.9
Beat her	0.0	0.0	0.0	0.0	0.0	5.6	0.0	2.4
Send her to her parents/Divorce her	0.0	50.0	16.7	15.4	0.0	16.7	3.3	24.4
Other	0.0	0.0	8.3	0.0	15.4	11.1	11.7	4.9
Attitude towards respect dignity of boy aged 11 or 12 against managed 30 (DI-7, 540)								
The same importance	55.6	20.0	66.7	46.2	59.0	50.0	60.0	41.5
Boy's dignity less important	44.4	80.0	33.3	53.8	41.0	50.0	40.0	58.5
Other workers reaction towards a mistaken worker (DI-10 , 418)								
Feel sorry for the mistaken and scolded worker and angry at the supervisor	11.1	0.0	0.0	7.7	10.3	0.0	91.7	97.6
Not pay any attention, that is not their problem	88.9	100.0	100.0	92.3	89.7	100.0	8.3	2.4
Total	9	10	12	13	39	18	60	41

DI_5: Those who would react in a respectable way; not demeaning such as bawling out-loud, to a subordinate worker who committed a terrible costly mistake have chosen the favorable response.

DI_6: Those who would react to the over-spending wife in the same respectable way, whether gently or firmly; even if this is not the first time, would also be favored.

DI_7: Those who would accord the same importance to kids as opposed to men would score higher than those who think a man's dignity means more.

DI_10: Those who described the reaction of workmates if a colleague is scolded over a big mistake by his superior, as compassionate with their work-mate would score higher on the dignity scale, than those who considered it not to matter.

6. Education Valuation and Aspiration

Table 6 Educational Valuation and Aspiration

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
The highest educational level boys should attend (As_1a. 301a.)								
Primary	11.1	0.0	0.0	7.7	0.0	0.0	1.7	2.4
Preparatory	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Secondary	11.1	10.0	16.7	7.7	5.1	5.6	8.3	7.3
university	33.3	80.0	50.0	76.9	43.6	44.4	43.3	63.4
Higher than university	44.4	10.0	33.3	7.7	51.3	50.0	46.7	26.8
Education advantages for ordinary man (AS-2. 302)								
Unlimited Benefits	33.3	50.0	66.7	61.5	76.9	77.8	68.3	65.9
Just Certificate	.0	.0	8.3	.0	2.6	5.6	3.3	2.4
Employment and professional Purposes	33.3	.0	25.0	38.5	25.6	33.3	26.7	26.8
Basic Necessities	66.7	80.0	41.7	46.2	38.5	22.2	43.3	43.9
None	11.1	.0	8.3	7.7	.0	5.6	3.3	4.9
The first important subjects should the boy learn (AS-3, 307)								
Reading and writing	88.9	10.0	33.3	7.7	25.6	22.2	36.7	14.6
Koran or bible and other religious issues	11.1	90.0	58.3	92.3	69.2	72.2	58.3	82.9
Learning some useful trade	.0	.0	8.3	.0	5.1	5.6	5.0	2.4
Relation between education and better life (AS_8.303)								
Need schooling	77.8	70.0	83.3	61.5	94.9	83.3	90.0	73.2
If intelligent no need	22.2	30.0	16.7	38.5	5.1	16.7	10.0	26.8
Qualifications to hold high office (CI-13,541)								
High education and special knowledge	55.6	50.0	66.7	53.8	51.3	50.0	55.0	51.2
Being the most popular among the people	11.1	0.0	0.0	0.0	5.1	5.6	5.0	2.4
Devotion to the old and time old ways	0.0	30.0	16.7	38.5	10.3	38.9	10.0	36.6
Coming up from a high family background	33.3	20.0	16.7	7.7	33.3	5.6	30.0	9.8
Determining the respect a man deserves (SC-2 306)								
Having much schooling	77.8	50.0	83.3	61.5	59.0	50.0	66.7	53.7
Coming from a high family background	0.0	20.0	8.3	7.7	15.4	16.7	11.7	14.6
Having much money	0.0	0.0	0.0	0.0	0.0	5.6	0.0	2.4
Total	9	10	12	13	39	18	60	41

AS_1a: Those who considered an educational level of university or higher educational level for boys to attain had the favored attitude.

AS_2: Those who considered education benefits to extend beyond basic necessities and or for the obtainment of a certificate, would score higher on the education valuation scale.

AS_3: Those who considered reading and writing as the first important subject the boy should learn were scored the 2 for their valuation of basic educational skills.

AS_8: Those who did not think that intelligence could substitute the need for education, to achieve a better life for oneself, scored higher.

CI_13: Those who scored the 2, thought that a high level of education and special knowledge would qualify a person to hold high office, than those coming from a big family, or the traditional thinking, or popular for other reasons.

SC_2: Those who decided that a person's education determines his deserved level of respect than his riches or his family background, scored higher than others.

7. Economic and Occupational Aspiration

Table 7 Economic and Occupational Aspiration

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
preferred Job for your son (AS-11a., 309)								
Skilled machine worker for 2000 LE per month	88.9	90.0	58.3	46.2	69.2	66.7	70.0	65.9
Clerical desk job for 1000 LE per month	11.1	10.0	41.7	53.8	30.8	33.3	30.0	34.1
Other things to have in the future (CO-7, 507)								
Production/ Capital Items								
1 item	33.3	0.0	100.0	100.0	91.7	80.0	82.4	77.8
2 items	33.3	100.0	0.0	0.0	0.0	20.0	5.9	22.2
3 items or more	33.3	0.0	0.0	0.0	8.3	0.0	11.8	0.0
Number of respondents want production/ capital items	3	1	2	3	12	5	17	9
High Cost Items								
1 item	22.2	16.7	25.0	33.3	22.9	28.6	23.2	28.1
2 items	33.3	50.0	50.0	50.0	45.7	35.7	44.6	43.8
3 items or more	44.4	33.3	25.0	16.7	31.4	35.7	32.1	28.1
Number of respondents want high cost items	9	6	12	12	35	14	56	32
Consumption Items								
1 item	25.0	22.2	16.7	33.3	30.3	37.5	26.4	32.4
2 items	37.5	44.4	41.7	41.7	39.4	50.0	39.6	45.9
3 items or more	37.5	33.3	41.7	25.0	30.3	12.5	34.0	21.6
Number of respondents want consumption items	8	9	12	12	33	16	53	37
Aspiration to increase the income (CO-8. 508)								
Strive to make more money	100.0	80.0	100.0	84.6	87.2	83.3	91.7	82.9
That is enough	0.0	20.0	0.0	15.4	12.8	16.7	8.3	17.1
Moving to another place for doubled salary (NE-1, 419)								
Move	44.4	50.0	50.0	38.5	41.0	27.8	43.3	36.6
Stay here	55.6	50.0	50.0	61.5	59.0	72.2	56.7	63.4
Total	9	10	12	13	39	18	60	41

AS_11a: Those who would choose for their sons the machine operator job, for a LE1000 more, over the clerical job, would be placed higher on the economic aspiration scale.

CO_7: Only those who wished to have at least one of each: the capital/investment items, the high cost items, and the consumption items or those who hoped to have at least two high cost items and three consumption items, in the future, would qualify for the high score of 2 on the economic aspiration scale.

CO_8: those who would settle for their satisfactory income and not strive to earn more would also have to settle for the lower score on the economic and occupational aspiration scale, and make space for the strivers.

NE_1: Those who are willing to move to a far away place for double their salary would score higher than those who would not.

8. Efficacy

Table 8 Efficacy

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Poor man changing his conditions (EF-1, 311)								
Surely succeed	22.2	70.0	41.7	53.8	30.8	55.6	31.7	58.5
Probably succeed	66.7	30.0	50.0	38.5	56.4	44.4	56.7	39.0
Probably fail	0.0	0.0	0.0	7.7	10.3	0.0	6.7	2.4
Surely fail	11.1	0.0	8.3	0.0	2.6	0.0	5.0	0.0
Relationship between accidents and luck (EF-2, 510)								
Entirely on carefulness	11.1	20.0	25.0	46.2	17.9	33.3	18.3	34.1
Mainly on carefulness	88.9	50.0	58.3	46.2	71.8	61.1	71.7	53.7
Mostly luck	0.0	0.0	8.3	0.0	5.1	5.6	5.0	2.4
Entirely luck	0.0	30.0	8.3	7.7	5.1	0.0	5.0	9.8
Getting ahead in life (EF-3, 511)								
Person's own efforts	66.7	60.0	66.7	76.9	51.3	61.1	56.7	65.9
Both have a role	11.1	20.0	33.3	15.4	43.6	27.8	36.7	22.0
Destiny	22.2	20.0	0.0	7.7	5.1	11.1	6.7	12.2
Destiny, intelligence and success (EF-4, 512)								
Completely succeeds	55.6	50.0	58.3	61.5	51.3	50.0	53.3	53.7
Could succeed	33.3	30.0	41.7	30.8	48.7	50.0	45.0	39.0
Not at all	11.1	20.0	0.0	7.7	0.0	0.0	1.7	7.3
Egyptians are big talkers not doers (EF-5, 513)								
Absolutely true	44.4	80.0	100.0	61.5	59.0	44.4	65.0	58.5
Somewhat true	33.3	0.0	0.0	15.4	20.5	38.9	18.3	22.0
Not true at all	22.2	20.0	0.0	23.1	20.5	16.7	16.7	19.5
For a better future of the country (EF-11, 514)								
People's hard work	33.3	20.0	16.7	23.1	12.8	27.8	16.7	24.4
Government's good planning	33.3	20.0	50.0	30.8	43.6	38.9	43.3	31.7
God's help	33.3	40.0	33.3	46.2	43.6	33.3	40.0	39.0
Good luck	0.0	20.0	0.0	0.0	0.0	0.0	0.0	4.9
Total	9	10	12	13	39	18	60	41

EF_1: Those who think that a poor man still has a chance to change his living conditions are receiving the high score than those who don't.

EF_2: Those who think that accidents can be prevented only through luck are scored lower than those who believe that even a little carefulness is a determinant

EF_3: Those who believe that a person's own hard work must represent an ingredient of one's advancement in life

EF_4: those who think that a young person destined to be poor, could still succeed in life if he is intelligent and ambitious, are placed higher on the scale, than those who do not.

EF_5: Those who think that Egyptians are never big dreamers, and that they are rather big doers, are also scored a 2.

EF_11: Those who think that either good government planning or people's hard work are major determinants for a better future for the country, score high.

9. Growth of Opinion

Table 9 Growth of Opinion

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
The Biggest problem facing the country (GO-2, 516)								
Internal Political Problems	55.6	30.0	58.3	66.7	64.1	55.6	61.7	52.5
Social Problems	33.3	30.0	33.3	25.0	23.1	5.6	26.7	17.5
Economic Problems	66.7	90.0	91.7	91.7	61.5	77.8	68.3	85.0
External Political Problems	0.0	0.0	0.0	0.0	5.1	5.6	3.3	2.5
Most important citizen right (CI_1, 312)								
Right to free education	77.8	70.0	50.0	69.2	46.2	55.6	51.7	63.4
Right to vote	22.2	30.0	50.0	30.8	53.8	44.4	48.3	36.6
Interviewing the wife and her opinions (GO-3,328)								
Many opinions different from yours	11.1	10.0	8.3	0.0	5.1	5.6	6.7	4.9
Some opinion different from yours	44.4	30.0	41.7	30.8	43.6	38.9	43.3	34.1
The same opinion as yours	22.2	30.0	41.7	7.7	10.3	22.2	18.3	19.5
NA	22.2	30.0	8.3	61.5	41.0	33.3	31.7	41.5
In disagreement, what we should teach the boy to do (GO-7. 518)								
Always go along with the group	33.3	30.0	8.3	15.4	17.9	22.2	18.3	22.0
Most times to go along with the group	33.3	50.0	50.0	15.4	25.6	27.8	31.7	29.3
Most time to hold to his own opinions	22.2	10.0	8.3	53.8	30.8	16.7	25.0	26.8
Always to hold to his own opinions	11.1	10.0	33.3	15.4	25.6	33.3	25.0	22.0
A man without religion can be good and useful to people (GO-8, 519)	22.2	40.0	50.0	46.2	41.0	50.0	40.0	46.3
Total	9	10	12	13	39	18	60	41

GO_2: Those who mention problems that constitute at least two broad domains of problems facing the country score higher.

CI_1: Those who consider a person's right to vote as more important than his entitlement for free education have more growth of opinion, than the others.

GO_3: those who think that their wife's responses to this questionnaire will be not a bit different than his are scoring less on the growth of opinion scale.

GO_7: Those who would teach a boy to generally yield for the general opinion or desire of the group in case of common disagreements are scoring a 2; higher than those who would teach him to stick to his opinion against the group.

GO_8: Those who would view a man without a heavenly religion, as good and useful as believers, are scored high on the growth of opinion scale, than those who do not think so.

10. Information

Table 10 Information

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Knowing the country and office of Sarkosy (IN-1,315)								
Country and office correct	0.0	10.0	16.7	15.4	20.5	11.1	16.7	12.2
Office only	11.1	0.0	0.0	0.0	10.3	11.1	8.3	4.9
Country only	0.0	0.0	0.0	0.0	2.6	0.0	1.7	0.0
Don't know	88.9	90.0	83.3	84.6	66.7	77.8	73.3	82.9
Knowing the country and office of Ghandi (IN-2,315)								
Country and office correct	11.1	10.0	8.3	15.4	28.2	27.8	21.7	19.5
Office only	11.1	10.0	8.3	0.0	10.3	5.6	10.0	4.9
Country only	11.1	0.0	8.3	0.0	7.7	5.6	8.3	2.4
Don't know	66.7	80.0	75.0	84.6	53.8	61.1	60.0	73.2
Knowing the country and office of Ahmedi Nejad (IN-3,315)								
Country and office correct	44.4	20.0	33.3	23.1	33.3	22.2	35.0	22.0
Office only	11.1	0.0	8.3	0.0	10.3	0.0	10.0	0.0
Country only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	44.4	80.0	58.3	76.9	56.4	77.8	55.0	78.0
Knowing the country and office of Nelson Mandela (IN-4,315)								
Country and office correct	11.1	10.0	16.7	7.7	33.3	16.7	26.7	12.2
Office only	11.1	20.0	16.7	0.0	15.4	11.1	15.0	9.8
Country only	22.2	0.0	0.0	0.0	2.6	16.7	5.0	7.3
Don't know	55.6	70.0	66.7	92.3	48.7	55.6	53.3	70.7
Knowing where Siwa located (IN-5, 316)								
Correct country	77.8	70.0	50.0	69.2	74.4	72.2	70.0	70.7
Incorrect country	.0	10.0	8.3	7.7	10.3	5.6	8.3	7.3
Don't know	22.2	20.0	41.7	23.1	15.4	22.2	21.7	22.0
Knowing where Washington located (IN-6, 316)								
Correct country	88.9	80.0	100.0	76.9	87.2	83.3	90.0	80.5
Incorrect country	0.0	0.0	0.0	15.4	7.7	5.6	5.0	7.3
Don't know	11.1	20.0	0.0	7.7	5.1	11.1	5.0	12.2
Knowing where Amsterdam located (IN-7, 316)								
Correct country	66.7	10.0	50.0	38.5	59.0	72.2	58.3	46.3
Incorrect country	11.1	40.0	16.7	38.5	28.2	22.2	23.3	31.7
Don't know	22.2	50.0	33.3	23.1	12.8	5.6	18.3	22.0
Knowing where Paris located (IN-8, 316)								
Correct country	88.9	60.0	58.3	92.3	84.6	83.3	80.0	80.5
Incorrect country	0.0	40.0	16.7	.0	10.3	11.1	10.0	14.6
Don't know	11.1	0.0	25.0	7.7	5.1	5.6	10.0	4.9
Knowing I-pod /MP3 device (CO-1a,505a)								
Correctly named it	66.7	20.0	33.3	76.9	89.7	88.9	75.0	68.3
Other name	22.2	50.0	33.3	15.4	2.6	5.6	11.7	19.5
Don't know	11.1	30.0	33.3	7.7	7.7	5.6	13.3	12.2

Knowing DVD device (CO-2a,505a)								
Correctly named it	66.7	80.0	83.3	76.9	92.3	94.4	86.7	85.4
Other name	22.2	10.0	8.3	7.7	5.1	5.6	8.3	7.3
Don't know	11.1	10.0	8.3	15.4	2.6	.0	5.0	7.3
Names of books (MM-8,323)								
Religious books	87.5	75.0	100.0	87.5	61.9	66.7	75.7	75.0
Cultural books	37.5	37.5	12.5	37.5	52.4	50.0	40.5	42.9
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	9	10	12	13	39	18	60	41

IN_1: Those who managed to identify either the office or the country of Sarkozy; being an international current president, scored high.

IN_2: Those who managed to identify at least the country of Gandhi; being a historical legendary revolutionary character, scored high.

IN_3: Those who recognized either the country or the office of Ahmadi Nejad; being a Middle Eastern controversial president, scored higher than those who did not.

IN_4: Those who recognized either the office or the country of Nelson Mandela; being an African revolutionary leader, would be placed higher on the scale of media information valuation.

IN_5: Those who identified where Siwa; being an Egyptian oasis, is located scored high on the information scale.

IN_6: Those who identified where Washington; being a most famous Foreign capital, is located scored high on the information scale.

IN_7: Those who identified where Amsterdam; being a Foreign capital, is located scored high on the information scale.

IN_8: Those who identified where Paris; being a well known Foreign capital, is located scored high on the information scale.

CO_1a: Those who correctly named an I-Pod/MP3gadget scored a 2, higher than those who could not.

CO_2a: Those who correctly named a DVD scored a 2, higher than those who could not.

MM_8: Those who successfully remembered and mentioned names of either cultural or even religious books, other than the holy books, would be placed higher on the information scale, than those who did not.

11. Job Satisfaction/Industrial Preference

Table 11 Job Satisfaction/ Industrial Preference

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Best occupation (AS-5a. 401a)								
A. job classification								
Technical / scientific	44.4	30.0	33.3	30.8	30.8	16.7	33.3	24.4
Management/administrative, business directors, employer	22.2	0.0	16.7	23.1	20.5	38.9	20.0	24.4
Clerks	0.0	10.0	0.0	7.7	12.8	11.1	8.3	9.8
Salesmen	11.1	0.0	0.0	0.0	5.1	5.6	5.0	2.4
Service	0.0	10.0	8.3	0.0	15.4	11.1	11.7	7.3
Farming / fishing / hunting	0.0	0.0	8.3	0.0	0.0	5.6	1.7	2.4
Production / transportation/ Construction/porters	22.2	50.0	33.3	38.5	15.4	11.1	20.0	29.3
Fairness of life(SC_9, 537)								
As Fair	77.8	70.0	75.0	53.8	59.0	66.7	65.0	63.4
Less fair than others	22.2	30.0	25.0	46.2	38.5	33.3	33.3	36.6
Remain factory worker (WC-2a.425)								
Yes	88.9	50.0	58.3	76.9	64.1	38.9	66.7	53.7
No	11.1	50.0	41.7	23.1	35.9	61.1	33.3	46.3
Best occupation (WC-2b. 426a.)								
A. job classification								
Technical / scientific	44.4	30.0	33.3	30.8	30.8	16.7	33.3	24.4
Management/administrative, business directors, employer	22.2	0.0	16.7	23.1	20.5	38.9	20.0	24.4
Clerks	0.0	10.0	0.0	7.7	12.8	11.1	8.3	9.8
Salesmen	11.1	0.0	0.0	0.0	5.1	5.6	5.0	2.4
Service	0.0	10.0	8.3	0.0	15.4	11.1	11.7	7.3
Farming / fishing / hunting	0.0	0.0	8.3	0.0	0.0	5.6	1.7	2.4
Production / transportation/ Construction/porters	22.2	50.0	33.3	38.5	15.4	11.1	20.0	29.3
Better work (WC-9.403)								
Work in a factory	44.4	50.0	41.7	30.8	48.7	44.4	46.7	41.5
Work in a firm	33.3	10.0	58.3	38.5	48.7	55.6	48.3	39.0
Work as a farmer	22.2	40.0	0.0	30.8	2.6	0.0	5.0	19.5
404 (factory): WC_10 (codebook2)								
All Aspects (skills, experience, development)	75.0	40.0	25.0	75.0	0.0	0.0	50.0	55.6
Basic Benefits	50.0	60.0	75.0	50.0	0.0	0.0	62.5	55.6
404 (farm or clerical): WC_10 (codebook2)								
All Aspects (Skills, experience, development)	66.7	0.0	50.0	100.0	0.0	0.0	55.6	80.0
Basic Benefits	100.0	100.0	50.0	50.0	0.0	0.0	66.7	60.0
Work Atmosphere (Comfort and Status)	0.0	0.0	16.7	0.0	0.0	0.0	11.1	0.0
405(2) Factory work Advantages WC_12b								
Better Skills, experience and development	75.0	20.0	20.0	50.0	42.1	37.5	42.9	35.3

Better Finances and regular benefits	25.0	80.0	60.0	50.0	63.2	37.5	57.1	52.9
Work Atmosphere and social life	0.0	0.0	20.0	25.0	0.0	25.0	3.6	17.6
None	0.0	0.0	0.0	0.0	0.0	12.5	0.0	5.9
DK	0.0	0.0	0.0	0.0	5.3	0.0	3.6	0.0
405(3) Clerical Work Advantages WC_12b								
Better Skills and experience	66.7	100.0	28.6	0.0	47.4	50.0	44.8	37.5
Better Finances and Comfort	66.7	0.0	57.1	80.0	31.6	80.0	41.4	75.0
Work Atmosphere and Status	0.0	0.0	57.1	60.0	36.8	20.0	37.9	31.3
None	0.0	0.0	0.0	0.0	5.3	10.0	3.4	6.3
DK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
406(2) Factory Work Disadvantages WC_12 (b)								
Time, physical effort, skill requirements and low income.	50.0	60.0	60.0	75.0	78.9	50.0	71.4	58.8
Lack of Development /Work Instability	25.0	20.0	40.0	0.0	5.3	37.5	14.3	23.5
Shop Floor Politics	50.0	0.0	40.0	25.0	42.1	25.0	42.9	17.6
None	0.0	20.0	0.0	0.0	5.3	0.0	3.6	5.9
406(3) Clerical Work Disadvantages WC_12 (c)								
Physical and Mental Exhaustion and low income	0.0	0.0	0.0	20.0	26.3	10.0	17.2	12.5
Skill Requirements and Work Instability	33.3	0.0	0.0	20.0	5.3	0.0	6.9	6.3
Office Politics and Monotony	0.0	0.0	0.0	20.0	26.3	30.0	17.2	25.0
None	66.7	100.0	85.7	40.0	42.1	60.0	55.2	56.3
DK	.0	.0	14.3	20.0	10.5	0.0	10.3	6.3
Advancement opportunities (WC-55. 407)								
Factory	33.3	80.0	25.0	38.5	48.7	38.9	41.7	48.8
Firm	55.6	0.0	75.0	15.4	33.3	50.0	45.0	26.8
Farm	11.1	10.0	0.0	30.8	10.3	0.0	8.3	12.2
The same	0.0	10.0	0.0	15.4	7.7	11.1	5.0	12.2
Total respondents who prefer not to remain a factory worker (WC-2b. 426a.)	8	5	7	10	25	7	40	22
Total	9	10	12	13	39	18	60	41

AS_5a: those who picked a technical/scientific or higher management/administrative job as their best hoped for occupation ever, are considered to be relatively at ease with their job satisfaction parameters as they would see themselves climbing the ladder, and would therefore score a 2; higher than those who go down the scale.

SC_9: Those who saw life as being fair to them as opposed to the others are also satisfied with their industrial vocation, thus scoring high than those who did not.

WC_2a: Those who would prefer to remain factory workers, naturally score higher on the industrial preference/ job satisfaction scale.

WC_2b: Those who otherwise would prefer to work somewhere else, scoring 1 in WC_2a, substituting a higher management employer occupation or a technical scientific one, would then regain their rank on the satisfaction/preference scale, scoring, here a 2; As being only more ambitious, for more; a fact that does not cancel out their job satisfaction or industrial preference levels.

WC_9: Whoever thought that working in a factory is better than working on a farm or in a clerical job in a non-industry-related-company, would naturally score high on the scale, than his counterparts.

WC_10: Those who would prefer to work in a factory on grounds of a plausible totality of reasons were considered satisfied, as opposed to those who mentioned just basic or frail advantages. As for those who preferred to work on a farm or in a clerical job, for again weak reasons or for no advantages at all, would again be considered as satisfied in their current factory work.

WC_11b: Those who mentioned again a totality of real advantages of factory work would be considered satisfied, as opposed to those who only mentioned trivial ones.

WC_11c: Those who found no advantages for clerical jobs in non industry-related companies were the ones who scored high on the satisfaction scale, as opposed to those who mentioned any kind of advantages, real or trivial.

WC_12b: As for factory work disadvantages, those who stated weak or disadvantages common to all lines of work scored high on the satisfaction scale, as opposed to those who stated strong real causes for dislike.

WC_12c: On the other hand, those who stated serious and real disadvantages to working as clerks in a company, not industry-related, were also considered satisfied and thus received a 2.

WC_55: Those who saw greater advancement opportunities in a factory other than in place else, would surely be scored higher on the scale.

12. Mass Media/ Communication: Attitude and Exposure

Table 12 Mass Media and Communication

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Frequency of knowing news and information from newspaper (MM-5a. 318)								
Every day	0.0	0.0	16.7	0.0	2.6	11.1	5.0	5.0
Few times a week	33.3	22.2	33.3	30.8	20.5	27.8	25.0	27.5
Occasionally	44.4	55.6	16.7	53.8	46.2	38.9	40.0	47.5
Never	22.2	22.2	33.3	15.4	30.8	22.2	30.0	20.0
Total	9	9	12	13	39	18	60	40
Mean number of newspaper/ magazines (MM-5b. 319)	2.67	1.50	2.00	1.25	2.56	2.00	2.39	1.69
Total	3	2	6	4	9	7	18	13
Trusted sources for world events (MM-6, 321)								
Friends	33.3	11.1	25.0	15.4	17.9	16.7	21.7	15.0
Newspaper	0.0	11.1	8.3	30.8	15.4	22.2	11.7	22.5
Radio	11.1	22.2	25.0	7.7	2.6	5.6	8.3	10.0
TV channels	11.1	44.4	8.3	7.7	28.2	38.9	21.7	30.0
Satellite station	77.8	11.1	58.3	69.2	79.5	61.1	75.0	52.5
Internet	22.2	22.2	41.7	0.0	23.1	27.8	26.7	17.5
Trusted sources for local events (MM-7, 322)								
Internet	11.1	11.1	8.3	23.1	12.8	0.0	11.7	10.0
Satellite station	11.1	11.1	16.7	7.7	5.1	5.6	8.3	7.5
TV channels	0.0	0.0	0.0	0.0	0.0	5.6	0.0	2.5
Radio	22.2	44.4	0.0	7.7	30.8	27.8	23.3	25.0
Local newspaper	55.6	11.1	50.0	61.5	43.6	38.9	46.7	40.0
Close friend	0.0	11.1	25.0	0.0	5.1	16.7	8.3	10.0
No one	0.0	11.1	0.0	0.0	2.6	5.6	1.7	5.0
Total	9	9	12	13	39	18	60	40
Influence of the internet on people (MM-9, 325)								
Good influence	50.0	37.5	33.3	46.2	38.5	33.3	39.3	38.5
Bad influence	50.0	62.5	66.7	46.2	59.0	61.1	58.9	56.4
Neither good nor bad influence	0.0	0.0	0.0	7.7	2.6	5.6	1.8	5.1
Total	8	8	9	13	39	18	56	39
The first preferable type of news (MM-10, 326)								
Accidents news	33.3	30.0	16.7	7.7	10.3	5.6	15.0	12.2
Sport news	22.2	60.0	58.3	61.5	30.8	50.0	35.0	56.1
Local news	11.1	0.0	0.0	0.0	20.5	22.2	15.0	9.8
Cultural news	0.0	0.0	0.0	7.7	2.6	11.1	1.7	7.3
Global news	33.3	0.0	16.7	23.1	25.6	11.1	25.0	12.2
Don't see any type of news	0.0	10.0	8.3	0.0	5.1	0.0	5.0	2.4
Missing	0.0	0.0	0.0	0.0	5.1	0.0	3.3	0.0
The second preferable type of news (MM-11, 326)								
Accidents news	0.0	33.3	0.0	15.4	13.5	16.7	8.8	20.0
Sport news	66.7	11.1	18.2	7.7	18.9	27.8	26.3	17.5
Local news	22.2	22.2	54.5	38.5	32.4	16.7	35.1	25.0
Cultural news	0.0	33.3	27.3	15.4	5.4	16.7	8.8	20.0

Global news	11.1	0.0	0.0	15.4	24.3	22.2	17.5	15.0
Don't see any type of news	0.0	0.0	0.0	0.0	5.4	0.0	3.5	0.0
Missing	0.0	0.0	0.0	7.7	0.0	0.0	0.0	2.5
Total	9	10	12	13	39	18	60	41

MM_5a: those who looked at newspapers or magazines at least a few times a week would be placed higher on the mass media exposure scale than those who did not.

MM_5b: Especially those who would look at 2 or more such publications would be given a bonus score of another 2.

MM_6: those who trusted the internet or the satellite channels the most as sources of international news, would again score higher, than those who trusted less global sources.

MM_7: Those who trusted satellite, internet as well as local newspapers for local news and events would also score higher than others.

MM_9: those who consider the internet to have a good influence on people and youth, scores high on the scale of mass media attitudes.

MM_10 and MM_11: Those, whose first and second preferred type of news ranged within global and local news as opposed to the other less serious or more common types such as entertainment or rumor types of news would definitely score high on the mass media scale in both questions.

13. Openness to New Experience

Table 13 Openness to New Experience

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Like to know someone born in a different region and his customs are very strange but he seems friendly (NE-2)	88.9	40.0	41.7	61.5	59.0	44.4	60.0	48.8
Prefer to meet new people (NE-3)								
Meet new people	55.6	90.0	100.0	84.6	74.4	72.2	76.7	80.5
Prefer people already known	44.4	10.0	.0	15.4	25.6	27.8	23.3	19.5
Understanding person's thinking who lives in another country a long way off (NE-5,522)	44.4	10.0	58.3	38.5	51.3	38.9	51.7	31.7
The longest trip made (NE-6)								
Foreign country	11.1	.0	8.3	.0	10.3	.0	10.0	.0
Arab country	.0	10.0	.0	7.7	5.1	5.6	3.3	7.3
Inside Egypt	88.9	90.0	91.7	92.3	84.6	94.4	86.7	92.7
Total	9	10	12	13	39	18	60	41

NE_2: Those who would not mind getting to know a stranger who is from another totally different region, and having very strange customs as opposed to theirs, are placed higher on the scale of openness than those who would rather not.

NE_3: Again, those who prefer to meet new people than stick to people already familiar, would score higher.

NE_5: Those who believe they would understand a stranger's way of thinking, even if he lives in a far away country than theirs are scored a 2 for openness to new experience, as opposed to those who do not think they could.

NE_6: Those who made a long trip outside of Egypt during their adult lives also would score higher than those who were confined to inside Egypt.

14. Professional Ambition

Table 14 Professional Ambition

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Best occupation for a rich man son (AS-7. 308)								
A. job classification								
Technical / scientific	44.4	60.0	58.3	23.1	48.7	16.7	50.0	29.3
Management/administrative business directors, employer	33.3	0.0	16.7	38.5	17.9	27.8	20.0	24.4
Clerks	11.1	0.0	16.7	0.0	2.6	11.1	6.7	4.9
Salesmen	11.1	10.0	8.3	23.1	12.8	16.7	11.7	17.1
Service	0.0	10.0	0.0	7.7	5.1	22.2	3.3	14.6
Production / transportation/ construction/porters	0.0	20.0	0.0	7.7	12.8	5.6	8.3	9.8
B .level of occupational aspiration								
Senior and medium Management	33.3	10.0	16.7	69.2	30.8	38.9	28.3	41.5
Specialized technical workers	55.6	60.0	50.0	0.0	43.6	11.1	46.7	19.5
Occupational	0.0	20.0	25.0	30.8	15.4	22.2	15.0	24.4
Clerical employment	0.0	0.0	0.0	0.0	0.0	5.6	0.0	2.4
Service workers	11.1	10.0	8.3	0.0	10.3	22.2	10.0	12.2
level of occupational aspiration for the respondent himself (AS-5b. 401b)								
Senior and medium Management	22.2	0.0	41.7	0.0	17.9	38.9	23.3	17.1
Specialized technical workers	55.6	40.0	33.3	38.5	43.6	22.2	43.3	31.7
Occupational	11.1	40.0	0.0	30.8	15.4	16.7	11.7	26.8
Clerical employment	0.0	10.0	0.0	15.4	7.7	11.1	5.0	12.2
Service workers	11.1	10.0	25.0	15.4	15.4	11.1	16.7	12.2
Total	9	10	12	13	39	18	60	41
level of occupational aspiration for the respondent himself (WC-2c. 426b)								
Senior and medium Management	12.5	.0	28.6	10.0	16.0	28.6	17.5	13.6
Specialized technical workers	12.5	.0	.0	50.0	24.0	.0	17.5	22.7
Occupational	25.0	40.0	.0	10.0	16.0	28.6	15.0	22.7
Clerical employment	12.5	.0	14.3	20.0	8.0	28.6	10.0	18.2
Service workers	37.5	60.0	57.1	10.0	36.0	14.3	40.0	22.7
Total	8	5	7	10	25	7	40	22

AS_7: Those who thought a best occupation for a rich man's son would rank in the highest occupation ranks such as technical scientific or

management/employer/directorship domains are scored a double high of 2, for both the rank and the level of aspiration, as opposed to those who gave a lower ranking.

AS_5b: Those who whished the same two higher levels of occupational aspirations for themselves as well, would also get a score of 2, as opposed to the others who settle for lower aspiration levels.

WC_2c: Also again senior and medium management as well as specialized technical workers would earn their respondent a higher place on the professional aspiration scale.

15. Planning Valuation

Table 15 Planning and Time Valuation

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Arranging and planning everything (PL-3, 529)								
Many less problems and difficulties	66.7	30.0	33.3	46.2	43.6	33.3	45.0	36.6
Somewhat less difficulties and problems	22.2	40.0	58.3	46.2	41.0	38.9	41.7	41.5
The same number difficulties and problems	11.1	30.0	8.3	7.7	15.4	27.8	13.3	22.0
Accepting future with not worrying (PL-1, 528)								
Yes	11.1	30.0	50.0	38.5	38.5	33.3	36.7	34.1
No	88.9	70.0	50.0	61.5	61.5	66.7	63.3	65.9
Hired a man to work (TI-3, 536)								
Set a fixed daily schedule	11.1	20.0	8.3	38.5	12.8	5.6	11.7	19.5
Allow him to set his daily schedule	33.3	50.0	41.7	15.4	51.3	38.9	46.7	34.1
Leave the daily schedule mostly up to him so long as he finished the job	55.6	30.0	50.0	46.2	35.9	55.6	41.7	46.3
Working with a strict time schedule (TI-4, 420)								
Good and necessary	66.7	70.0	75.0	69.2	79.5	55.6	76.7	63.4
A pity but necessary	.0	.0	8.3	15.4	20.5	33.3	15.0	19.5
Bad and unnecessary	33.3	30.0	16.7	15.4	.0	11.1	8.3	17.1
Total	9	10	12	13	39	18	60	41

PL_3: Those who believed in planning as a means to at least minimize the number of problems and difficulties one would encounter, are scored a 2.

PL_1: Those who did not agree with their colleague, who claimed to accept the future with no worries whatsoever, placed themselves higher on the planning valuation scale.

TI_3: Those who did not think it to be wise to leave the handy worker, hired to repair something at home, completely at his own discretion to finish the work, fixed themselves a place higher on the planning scale for favoring agreeing on some sort of a schedule.

TI_4: Those who thought that having to follow a strict time schedule as bad and unnecessary secured themselves a lower score on the planning scale, as opposed to their counterparts who thought otherwise.

16. Responsibility and Time Valuation

Table 16 Responsibility and Time Valuation

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Important things in fellow worker (CA-3,408)								
Reliable fulfilling their share of work	55.6	90.0	50.0	23.1	43.6	33.3	46.7	43.9
Good character , respected in the community	11.1	0.0	16.7	15.4	7.7	0.0	10.0	4.9
Friendly and good companions	33.3	10.0	33.3	61.5	48.7	66.7	43.3	51.2
Act towards not doing work required (CA-50, 412)								
Tell them it is not right	100.0	90.0	91.7	84.6	87.2	77.8	90.0	82.9
Not good but boss's responsibility	0.0	0.0	8.3	7.7	5.1	5.6	5.0	4.9
Not care/not concerned	0.0	10.0	0.0	7.7	7.7	16.7	5.0	12.2
Type of work preferred (EF-8,409)								
With many decisions and challenges	66.7	50.0	83.3	61.5	69.2	66.7	71.7	61.0
With some challenges	11.1	30.0	8.3	7.7	12.8	11.1	11.7	14.6
With no decisions and challenges	22.2	20.0	8.3	30.8	17.9	22.2	16.7	24.4
Improving the conditions of life (EF-9, 532)								
People rely on themselves alone	44.4	40.0	50.0	46.2	15.4	44.4	26.7	43.9
Responsibility shared between people and government	55.6	50.0	25.0	30.8	56.4	44.4	50.0	41.5
Rely on government only	0.0	10.0	25.0	23.1	28.2	11.1	23.3	14.6
Offered more responsible work (ST-5,410)								
Highly Responsible	100.0	80.0	100.0	69.2	43.6	33.3	63.3	56.1
Seriously responsible	0.0	20.0	8.3	23.1	0.0	0.0	1.7	12.2
Responsible	11.1	0.0	0.0	15.4	69.2	83.3	46.7	41.5
Fears Responsibility	0.0	0.0	0.0	0.0	5.1	5.6	3.3	2.4
Availability of work materials (ST-6, 411)								
Highly Responsible	44.4	50.0	50.0	53.8	64.1	83.3	58.3	65.9
Responsible	11.1	50.0	16.7	46.2	25.6	16.7	21.7	34.1
Fears Responsibility	33.3	20.0	33.3	7.7	20.5	11.1	25.0	12.2
None	11.1	0.0	0.0	0.0	0.0	0.0	1.7	0.0
DK	0.0	0.0	0.0	0.0	2.6	0.0	1.7	0.0
Youth and respect for time (TI-7, 534)								
Never	33.3	60.0	58.3	61.5	66.7	72.2	60.0	65.9
Few times	44.4	20.0	41.7	15.4	17.9	16.7	26.7	17.1

Most times	22.2	20.0	0.0	15.4	12.8	5.6	11.7	12.2
Always	0.0	0.0	0.0	7.7	2.6	5.6	1.7	4.9
Waiting time for a friend(in minutes) (TI-5, 535)								
Less than 9 minutes	0.0	0.0	25.0	15.4	15.4	11.1	15.0	9.8
10 to 15 minutes	44.4	20.0	8.3	15.4	48.7	55.6	40.0	34.1
16 to 29 minutes	0.0	0.0	8.3	0.0	5.1	0.0	5.0	0.0
30 minutes or more	55.6	80.0	58.3	69.2	30.8	33.3	40.0	56.1
Total	9	10	12	13	39	18	60	41

CA_3: Those who considered 'being reliable and doing his share of work' the most important quality in work mates, score a 2 for their valuing responsibility, as opposed to others who picked unrelated qualities.

CA_50: Those who would act in a responsible pro-active way, telling their fellow workers- who were not working in a rightful way-that they were mistaken, earned them a higher score than those who preferred to keep to themselves.

EF_8: Those who preferred a somewhat challenging type of work, to no challenge at all, scored higher than their counterparts, on the responsibility scale.

EF_9: Those who believed that at all times people cannot rely completely and only on the government to improve their living conditions, scored a solid 2, for feeling responsible to at least share in the responsibility.

ST_5: Upon responding to a calling by his superior for accepting a more responsible task or job, whoever would be forthcoming in at least a seriously responsible manner, would score higher than the hesitant responsible.

ST_6: Upon discovering that work materials needed to achieve the above task were unavailable, those who would pursue them in a responsible way would score higher than those who would fear to continue with the task offered.

TI_7: Those who would not always excuse the youth for not respecting time, score higher than those who are lenient.

TI_5: Those who would start getting irritated, after a friend was late for an appointment, by more than 15 minutes would score higher on the time valuation scale as well.

17. Social Stratification, Understanding, and Fulfillment

Table 17 Social Stratification Understanding and Fulfillment

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
The reason it is a better job (AS_6, 402)								
It is suitable for my skills	77.8	90.0	83.3	92.3	94.9	83.3	90.0	87.8
I Don't know anything other than it	0.0	10.0	8.3	7.7	0.0	0.0	1.7	4.9
Others	22.2	10.0	25.0	0.0	7.7	16.7	13.3	9.8
# of Reasons why life is or isn't fair (SC-10, 538)								
Social justice								
1 reason	88.9	80.0	83.3	69.2	76.9	83.3	80.0	78.0
2 reasons	11.1	20.0	8.3	15.4	17.9	5.6	15.0	12.2
3+ reasons	0.0	0.0	8.3	15.4	5.1	11.1	5.0	9.8
Mediation and corruption								
1 reason	0.0	10.0	0.0	8.3	0.0	0.0	0.0	5.1
2 reasons	12.5	30.0	18.2	0.0	10.3	11.8	12.1	12.8
3+ reasons	87.5	60.0	81.8	91.7	89.7	88.2	87.9	82.1
The Social pyramid (SC-6, 531)								
Easy	22.2	20.0	33.3	15.4	17.9	11.1	21.7	14.6
Hard	77.8	80.0	66.7	84.6	82.1	88.9	78.3	85.4
Total	9	10	12	13	39	18	60	41

AS_6: Whoever believed, his job was the best for him because it suited his skills and abilities, and knowledge, scored high as understanding the workings of social stratification rules. Others who gave other reasons did not understand or were not fulfilled, so scored lower.

SC_10: Whoever had two or more reasons to give for whatever his feeling of life being either fair or unfair to him, would place himself higher on the social stratification scale, for understanding the workings of society.

SC_6: whoever believed that it was not as difficult to climb the social pyramid, and change his social status up above on the social scale from one stratum to another, proves to have got some sort of fulfillment that would rightfully, place him higher on the scale.

18. Technical Skill Valuation

Table 18 Technical Skill Valuation

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
The first important subject should the boy learn (AS-3, 307								
Reading and writing	88.9	10.0	33.3	7.7	25.6	22.2	36.7	14.6
Koran or bible and other religious issues	11.1	90.0	58.3	92.3	69.2	72.2	58.3	82.9
Learning some useful trade	.0	.0	8.3	.0	5.1	5.6	5.0	2.4
The second important subject should the boy learn (AS4, 307)								
Reading and writing	11.1	80.0	50.0	61.5	59.0	61.1	50.0	65.9
Koran or bible and other religious issues	66.7	10.0	33.3	7.7	23.1	22.2	31.7	14.6
Learning some useful trade	22.2	10.0	16.7	30.8	17.9	16.7	18.3	19.5
How to expand the business (TS-12, 421)								
Giving the present workers extra training	88.9	20.0	66.7	76.9	74.4	50.0	75.0	51.2
Hire more workers than previously	11.1	80.0	33.3	23.1	25.6	50.0	25.0	48.8
The importance of skillful with machines (TS-14, 427)								
The most important at all	22.2	40.0	25.0	23.1	35.9	22.2	5.0	4.9
Very important	44.4	40.0	58.3	69.2	41.0	44.4	18.3	17.1
Perhaps a little	33.3	20.0	16.7	7.7	15.4	22.2	45.0	51.2
Not at all important	.0	.0	.0	.0	7.7	11.1	31.7	26.8
Total	9	10	12	13	39	18	60	41

AS_3 and AS_4: If the first or second thing a boy should learn in school is some useful trade, then these responses should earn their holders a higher score for either one.

TS_12: Whoever thought that giving workers extra training is more useful for expanding the business than just hiring more workers got a good valuation for technical skills and deserves a higher rank on the technical skill valuation scale.

TS_14: Those who thought that it would still be at least very important for an intelligent educated person to learn to be skillful with machines, score higher on the technical valuation scale than those who thought it might be just important.

19. Understanding Production

Table 19 Understanding Production

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Ways to determine how much to pay to workers (UN-1, 422)								
Skilled workers must be offered more to attract them	88.9	90.0	50.0	76.9	87.2	83.3	80.0	82.9
By children un fair to unmarried workers	11.1	.0	33.3	23.1	10.3	11.1	15.0	12.2
Management has legitimate right to make rules	0.0	10.0	16.7	0.0	2.6	0.0	5.0	2.4
Other	0.0	0.0	0.0	0.0	0.0	5.6	.0	2.4
Friendly manager with the workers (UN-2, 423)								
Easily maintain discipline if they are unfriendly	77.8	70.0	75.0	92.3	59.0	72.2	65.0	78.0
Factory is a place to work	11.1	20.0	25.0	7.7	33.3	16.7	28.3	14.6
Management doesn't want to encourage disrespect for authority	11.1	10.0	0.0	0.0	5.1	5.6	5.0	4.9
Other	0.0	0.0	0.0	0.0	2.6	5.6	1.7	2.4
Management of iron factory (UN-3, 424)								
Iron can be made more efficiently that way	88.9	60.0	75.0	92.3	48.7	55.6	60.0	68.3
Worker earns more money that way	11.1	20.0	0.0	0.0	35.9	27.8	25.0	17.1
Management runs and arranges the work	0.0	20.0	25.0	7.7	12.8	5.6	13.3	9.8
Wrong knowledge	0.0	0.0	0.0	0.0	2.6	0.0	1.7	0.0
Other	0.0	0.0	0.0	0.0	0.0	11.1	0.0	4.9
Total	9	10	12	13	39	18	60	41

UN_1: In explaining that skilled workers must be paid more to attract them respondents secure themselves a higher score on the understanding scale, for proving their understanding of the motives behind the factories wage structure.

UN_2: Those who understood the motives of management, not to encourage extreme friendship between supervisors and their workers, as not to waste time of work and to be able to easily maintain discipline, scored higher than those who thought otherwise.

UN_3: Those who explained their understanding of the reasons why iron production has to be fulfilled in an assembly line fashion, as it must be the most efficient way, or even, that the management runs and arranges work as they see it feasible, both earned them a score of 2 for understandings the workings.

20. Verbal Fluency

Table 20 Verbal Fluency

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Education advantages for ordinary man (AS-2. 302)								
Number of words in A	13	17	54	48	231	98	298	163
Number of words in B	16	0	16	17	37	32	69	49
Number of words in C	42	42	23	40	113	26	178	108
Number of words in D	0	0	2	0	1	0	3	0
None	0	0	0	0	0	0	0	0
Total	9	10	12	13	39	18	60	41
Man's happiness (CO-9b, 509b)								
Number of words	44	12	47	47	164	69	255	128
Total	9	4	10	10	36	15	55	29
The Biggest problem facing the country (GO-2, 516)								
Number of words in A	27	17	36	32	137	65	200	114
Number of words in B	16	8	9	23	43	2	68	33
Number of words in C	31	28	33	32	91	51	155	111
Number of words in D	0	0	0	0	4	3	4	3
Reasons why life isn't fair (SC-10, 538)								
Number of words in A	48	27	57	43	138	71	243	141
Number of words in B	21	39	28	62	221	78	270	179
Why (WC_10, 404)								
Number of words	39	52	70	73	226	125	335	250
Number of words of advantages of working in								
Farm Work (WC_11 (a), 405(1))	42	51	62	34	138	72	242	157
Factory Work (WC_11 (b), 405(2))	38	57	67	48	196	101	301	206
Clerical Work (WC_11(c), 405(3))	36	17	51	36	188	101	275	154
Number of words of disadvantages of working in								
Farm Work (WC_12 (a), 406(1))	52	50	52	40	111	62	215	152
Factory Work (WC_12 (b), 406(2))	72	65	61	75	268	103	401	243
Clerical Work (WC_12 (c), 406(3))	12	10	14	12	130	52	156	74
Total	9	10	12	13	39	18	60	41

AS_2, CO_9b, GO_2, SC_10, WC_10, WC_11a, b, and c, and WC_12a, b, and c:

In the course of answering open-ended questions, all full words spelled out by the respondent were recorded and then counted. The median absolute number of words

would later be calculated for the purpose of computing differentials in the subsequent sets of scored tables. Of course the higher than median would be assigned a score of 2, reflecting a higher level of verbal fluency, while the lower would automatically be assigned a 1.

21. Women's Rights and Minority Opinion Valuation

Table 21 Women's Rights/ Minority Opinion Valuation

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
The highest educational level girls should attend (As_1b. 301b)								
Primary	0.0	0.0	0.0	7.7	0.0	0.0	0.0	2.4
Preparatory	0.0	0.0	0.0	7.7	0.0	0.0	0.0	2.4
Secondary	33.3	10.0	16.7	23.1	15.4	22.2	18.3	19.5
university	33.3	90.0	66.7	46.2	43.6	38.9	46.7	53.7
Higher than university	33.3	0.0	16.7	15.4	41.0	38.9	35.0	22.0
Importance of husband's opinion (GO-5, 329)								
Wife's opinion is also important	77.8	80.0	66.7	100.0	89.7	83.3	83.3	87.8
Husband speaks for his all family	22.2	20.0	33.3	0.0	10.3	16.7	16.7	12.2
Pay attention to (GO-6,517)								
Attention to what ordinary people say	77.8	90.0	83.3	92.3	94.9	88.9	90.0	90.2
Equal attention to what people and leaders say	0.0	0.0	0.0	0.0	2.6	0.0	1.7	0.0
Most attention to the town leaders	22.2	10.0	16.7	7.7	2.6	11.1	8.3	9.8
Discussing things/work matters with wives(WR-3, 330)								
Often	11.1	10.0	25.0	0.0	12.8	5.6	15.0	4.9
Once in a while	33.3	40.0	50.0	23.1	35.9	50.0	38.3	39.0
Not at all	33.3	20.0	16.7	15.4	10.3	11.1	15.0	14.6
NA	22.2	30.0	8.3	61.5	41.0	33.3	31.7	41.5
Political discussion with wife (WR-4, 331)								
Often	0.0	0.0	16.7	0.0	2.6	11.1	5.0	4.9
Once in a while	44.4	30.0	58.3	23.1	43.6	27.8	46.7	26.8
Not at all	33.3	40.0	16.7	15.4	12.8	22.2	16.7	24.4
NA	22.2	30.0	8.3	61.5	41.0	38.9	31.7	43.9
Equality between men and women in work salary (WR-7, 428)								
Equal	55.6	30.0	41.7	61.5	82.1	88.9	70.0	65.9
Men should get a little more	22.2	60.0	33.3	38.5	10.3	5.6	16.7	29.3
Women should get a little	11.1	10.0	8.3	0.0	2.6	0.0	5.0	2.4

more								
Men should get more than women	11.1	0.0	16.7	0.0	5.1	5.6	8.3	2.4
Total	9	10	12	13	39	18	60	41

AS_1b: Those who considered university or higher levels as the desirable education levels for girls would be placed higher on the women's rights scale, than those who considered any lower levels.

GO_5: Those who confirmed that knowing the wife's opinion is as important as the husband's, scored higher than those asserting that the husband's opinion suffice for all his family members'.

GO_6: Those who confirmed that to know the real problems facing a village or a suburb, we should ask the ordinary people living there, more so than the district officer or the village leader, scored a 2 for their valuation of minority's opinion.

WR_3: Those who discussed work matters with their wives only every once in a while or not at all scored less on the women's right scale as opposed to those who did it often.

WR_4: Those, on the other hand, who discussed politics with their wives even only once in a while, scored higher than those who never did.

WR_7: Those who thought that women performing their same work and producing as much as men do, should have equal pay, scored higher on the women's right scale as opposed to those who did not think it was viable.

22. Intelligence Level

a. Workers who got right at least 44% of the arithmetic test would score a 2.

b. Supervisors' ratings as for the workers' ability to learn would also be counted and scored a 2 for an over 50% rating from the supervisor.

23. Workmanship and Technical Proficiency

These scores would be obtained from:

a. Scored factory records

b. Scores of leadership abilities, work stability, workmanship and responsibility from supervisors' ratings. Those who would score more than 60% would deserve a score of 2, as opposed to those who earned less, on these indicators.

Appendix I

Cultural, Social, Technical and All Theme Binary and Scale Scoring

Cultural

Table 1 Cultural Totaled Binary Scoring

	Arctec Inc.		Autotex		Exilar Egypt		Total		Max. Score
	Old	New	Old	New	Old	New	Old	New	
Educational Valuation and Aspiration	8.8	7.7	8.5	7.7	8.3	8.0	8.4	7.8	12
Information	16.3	15.6	15.9	17.0	16.8	17.1	16.6	16.7	22
Communication and Media	10.5	10.0	7.6	7.8	12.0	11.0	11.0	10.5	14
Openness to New Experience	4.9	4.4	5.0	4.8	4.9	4.6	4.9	4.6	8
Growth of Opinion	5.9	5.4	6.4	6.8	6.2	6.0	6.2	6.0	10
Women's Rights/ Minority Opinion Valuation	8.7	9.1	9.1	9.4	9.8	9.7	9.4	9.5	12
Consumption Attitudes	9.2	9.0	8.8	9.3	9.6	9.2	9.5	9.2	10
Verbal Fluency	9.8	8.3	9.7	8.9	9.8	9.7	9.8	9.1	14

Table 2 Cultural Scale Scoring

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Educational Valuation and Aspiration	73.2	64.2	70.8	64.1	68.8	66.7	69.8	65.3
Information	74.2	70.9	72.3	77.3	76.3	77.8	75.2	76.0
Communication and Media	75.0	71.4	54.2	56.0	85.7	78.6	78.6	75.0
Openness to New Experience	61.1	55.0	62.5	60.6	60.6	57.0	61.0	57.6
Growth of Opinion	58.6	54.3	63.6	68.0	62.2	60.0	62.0	60.0
Women's Rights/ Minority Opinion Valuation	72.6	76.2	75.8	78.3	81.5	81.1	78.4	79.0
Consumption Attitudes	92.0	90.0	88.0	92.9	96.0	92.3	94.5	92.1
Verbal Fluency	69.8	59.3	69.1	63.7	70.2	69.4	69.9	65.2

Social

Table 3 Social Totaled Binary Scoring

	Arctec Inc		Autotex		Exilar Egypt		Total		Max. Score
	Old	New	Old	New	Old	New	Old	New	
Openness to New Experience	4.9	4.4	5.0	4.9	4.9	4.6	4.9	4.6	8
Responsibility and Time Valuation	10.4	10.2	10.3	9.5	10.2	10.2	10.3	10.0	16
Economic and Occupational Aspiration	7.1	6.4	6.8	6.6	7.1	6.8	7.0	6.7	12
Dignity Valuation, Awareness of and Respect for the Other	7.1	6.6	7.4	7.2	7.2	6.9	7.3	6.9	8
Active Citizenship	6.6	5.8	7.0	5.8	5.1	6.3	5.7	6.0	14
Social Stratification Understanding and Fulfillment	3.2	3.1	3.3	3.2	3.2	3.1	3.2	3.1	6
Change Valuation	5.4	5.5	5.0	5.7	5.4	5.7	5.3	5.7	10
Job Satisfaction/ Industrial Preference	9.1	9.0	9.1	9.1	9.4	8.7	9.3	9.0	22
Women's Rights/ Minority Opinion Valuation	8.7	9.1	9.1	9.4	9.8	9.7	9.4	9.5	12
Calculability and Trust	5.3	5.3	5.0	5.2	5.0	5.1	5.1	5.2	6
Professional Ambition	8.5	7.2	7.9	8.4	8.4	7.0	8.3	7.7	10
Efficacy	10.3	9.5	9.8	9.9	10.2	10.6	10.2	10.1	12

Table 4 Social Scale Scoring

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Openness to New Experience	61.1	55.0	62.5	60.6	60.6	57.0	61.0	57.6
Responsibility and Time Valuation	65.3	63.8	64.6	59.6	63.8	63.9	64.2	62.5
Economic and Occupational Aspiration	59.3	53.3	56.9	55.2	58.8	56.9	58.5	55.5
Dignity Valuation, Awareness of and Respect for the Other	88.9	82.5	92.8	89.4	90.4	86.8	90.6	86.6
Active Citizenship	46.9	41.4	50.0	41.2	36.1	45.2	40.5	43.0
Social Stratification Understanding and Fulfillment	53.7	51.7	55.5	52.5	53.0	51.0	53.7	51.7
Change Valuation	54.0	55.0	50.0	56.7	54.1	57.1	53.4	56.5
Job Satisfaction/ Industrial Preference	41.5	40.9	41.5	41.4	42.9	39.6	42.4	40.7
Women's Rights/ Minority Opinion Valuation	72.6	76.2	75.8	78.3	81.5	81.1	78.4	79.0
Calculability and Trust	88.8	88.3	83.3	85.8	83.8	84.3	84.5	85.8
Professional Ambition	85.0	72.0	78.6	84.0	83.6	70.0	83.0	76.8
Efficacy	86.1	79.2	81.3	82.7	85.3	88.0	84.6	84.2

Technical

Table 5 Technical Totaled Binary Scoring

	Arctec Inc.		Autotex		Exilar Egypt		Total		Max. Score
	Old	New	Old	New	Old	New	Old	New	
Technical Skill Valuation	6.6	5.9	6.3	6.4	6.4	6.0	6.4	6.1	8
Planning and Time Valuation	6.1	6.4	6.8	6.7	6.9	6.4	6.7	6.5	8
Efficacy	10.3	9.5	9.8	9.9	10.2	10.6	10.2	10.1	12
Understanding Production	5.7	5.6	5.5	5.8	5.4	5.3	5.5	5.5	6
Responsibility and Time Valuation	10.4	10.2	10.3	9.5	10.2	10.2	10.3	10.0	16
Change Valuation	5.4	5.5	5.0	5.7	5.4	5.7	5.3	5.7	10
Job Satisfaction/ Industrial Preference	9.1	9.0	9.1	9.1	9.4	8.7	9.3	9.0	22
Intelligence Level	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.5	4
Work Behavior Scale	4.9	4.8	5.0	4.7	4.9	4.5	4.9	4.6	10

Table 6 Technical Scale Scoring

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Technical Skill Valuation	82.0	73.8	79.1	79.8	79.5	75.0	79.8	76.3
Planning and Time Valuation	76.4	80.0	84.4	83.6	85.9	79.9	84.1	81.1
Efficacy	86.1	79.2	81.3	82.7	85.3	88.0	84.6	84.2
Understanding Production	94.5	93.3	91.7	96.2	90.2	88.8	91.2	92.3
Responsibility and Time Valuation	65.3	63.8	64.6	59.6	63.8	63.9	64.2	62.5
Change Valuation	54.0	55.0	50.0	56.7	54.1	57.1	53.4	56.5
Job Satisfaction/ Industrial Preference	41.5	40.9	41.5	41.4	42.9	39.6	42.4	40.7
Intelligence Level	72.9	70.0	71.2	72.4	75.8	76.2	74.5	73.4
Work Behavior Scale	41.2	40.0	41.7	39.1	40.7	37.5	41.0	38.7

All Theme Human Capital Scale Scoring

Table 7 Total Human Capital Scale Scoring

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Active Citizenship	46.9	41.4	50.0	41.2	36.1	45.2	40.5	43.0
Calculability and Trust	88.8	88.3	83.3	85.8	83.8	84.3	84.5	85.8
Change Valuation	54.0	55.0	50.0	56.7	54.1	57.1	53.4	56.5
Consumerism and Consumption Attitudes	92.0	90.0	88.0	92.9	96.0	92.3	94.5	92.1
Dignity Valuation	88.9	82.5	92.8	89.4	90.4	86.8	90.6	86.6
Education Valuation and Aspiration	73.2	64.2	70.8	64.1	68.8	66.7	69.8	65.3
Economic aspiration	59.3	53.3	56.9	55.2	58.8	56.9	58.5	55.5
Efficacy	86.1	79.2	81.3	82.7	85.3	88.0	84.6	84.2
Growth of Opinion	58.6	54.3	63.6	68.0	62.2	60.0	62.0	60.0
Information	74.2	70.9	72.3	77.3	76.3	77.8	75.2	76.0
Intelligence Level	72.9	70.0	71.2	72.4	75.8	76.2	74.5	73.4
Job Satisfaction/ Industrial Preference	41.5	40.9	41.5	41.4	42.9	39.6	42.4	40.7
Mass Media Attitude and Exposure	75.0	71.4	54.2	56.0	85.7	78.6	78.6	75.0
Openness to New Experience	61.1	55.0	62.5	60.6	60.6	57.0	61.0	57.6
Professional Ambition	85.0	72.0	78.6	84.0	83.6	70.0	83.0	76.8
Planning Valuation	76.4	80.0	84.4	83.6	85.9	79.9	84.1	81.1
Responsibility and Time Valuation	65.3	63.8	64.6	59.6	63.8	63.9	64.2	62.5
Social Stratification								
Understanding and Fulfillment	53.7	51.7	55.5	52.5	53.0	51.0	53.7	51.7
Technical Skill Valuation	82.0	73.8	79.1	79.8	79.5	75.0	79.8	76.3
Understanding Production	94.5	93.3	91.7	96.2	90.2	88.8	91.2	92.3
Verbal Fluency	69.8	59.3	69.1	63.7	70.2	69.4	69.9	65.2
Women's Rights and Minority Opinion Valuation	72.6	76.2	75.8	78.3	81.5	81.1	78.4	79.0
Workmanship and technical Proficiency	41.2	40.0	41.7	39.1	40.7	37.5	41.0	38.7

Appendix J

Cultural, Social, Technical and All Theme Human Capital Differentials

Technical

Table 1 Technical differentials

	Arctec Inc.	Autotex	Exilar Egypt	Total
Technical Skill Valuation	8.2	-0.7	4.5	3.5
Planning and Time Valuation	-3.6	0.8	6	3
Efficacy	6.9	-1.4	-2.7	0.4
Understanding Production	1.2	-4.5	1.4	-1.1
Responsibility and Time Valuation	1.5	5	-0.1	1.7
Change Valuation	-1	-6.7	-3	-3.1
Job Satisfaction/ Industrial Preference	0.6	0.1	3.3	1.7
Intelligence Level	2.9	-1.2	-0.4	1.1
Work Behavior Scale	1.2	2.6	3.2	2.3
Total	3	-1	0.96	1.3

Table 2 Cultural differentials

	Arctec Inc.	Autotex	Exilar Egypt	Total
Educational Valuation and Aspiration	9	6.7	2.1	4.5
Information	3.3	-5	-1.5	-0.8
Communication and Media	3.6	-1.8	7.1	3.6
Openness to New Experience	6.1	1.9	3.6	3.4
Growth of Opinion	4.3	-4.4	2.2	2
Women's Rights/ Minority Opinion Valuation	-3.6	-2.5	0.4	-0.6
Consumption Attitudes	2	-4.9	3.7	2.4
Verbal Fluency	10.5	5.4	0.8	4.7
Total	2.75	-2.9	1.05	0.46

Social

Table 3 Social differentials

	Arctec Inc.	Autotex	Exilar Egypt	Total
Openness to New Experience	0.5	0.1	0.3	0.3
Responsibility and Time Valuation	0.2	0.8	0	0.3
Economic and Occupational Aspiration	0.7	0.2	0.3	0.3
Dignity Valuation, Awareness of and Respect for the Other	0.5	0.2	0.3	0.4
Active Citizenship	0.8	1.2	-1.2	-0.3
Social Stratification Understanding and Fulfillment	0.1	0.1	0.1	0.1
Change Valuation	-0.1	-0.7	-0.3	-0.4
Job Satisfaction/ Industrial Preference	0.1	0	0.7	0.3
Women's Rights/ Minority Opinion Valuation	-0.4	-0.3	0.1	-0.1
Calculability and Trust	0	-0.2	-0.1	-0.1
Professional Ambition	1.3	-0.5	1.4	0.6
Efficacy	0.8	-0.1	-0.4	0.1
Total	11.34	4.88	3.68	5.1

Table 4 Total differentials

	Arctec Inc.	Autotex	Exilar Egypt	Total
Cultural Theme	2.75	-2.9	1.05	0.46
Technical Theme	3	-1	0.96	1.3
Social Theme	11.34	4.88	3.68	5.1

Total Human Capital Themes Differentials

Table 5 Total Human Capital Themes Differentials

	Arctec Inc.	Autotex	Exilar Egypt	Total
Active Citizenship	5.5	8.8	-9.1	-2.5
Calculability and Trust	0.5	-2.5	-0.5	-1.3
Change Valuation	-1	-6.7	-3	-3.1
Consumerism and Consumption Attitudes	2	-4.9	3.7	2.4
Dignity Valuation	6.4	3.4	3.6	4
Education Valuation and Aspiration	9	6.7	2.1	4.5
Economic aspiration	6	1.7	1.9	3
Efficacy	6.9	-1.4	-2.7	0.4
Growth of Opinion	4.3	-4.4	2.2	2
Information	3.3	-5	-1.5	-0.8
Intelligence Level	2.9	-1.2	-0.4	1.1
Job Satisfaction/ Industrial Preference	0.6	0.1	3.3	1.7
Mass Media Attitude and Exposure	3.6	-1.8	7.1	3.6
Openness to New Experience	6.1	1.9	3.6	3.4
Professional Ambition	13	-5.4	13.6	6.2
Planning Valuation	-3.6	0.8	6	3
Responsibility and Time Valuation	1.5	5	-0.1	1.7
Social Stratification				
Understanding and Fulfillment	2	3	2	2
Technical Skill Valuation	8.2	-0.7	4.5	3.5
Understanding Production	1.2	-4.5	1.4	-1.1
Verbal Fluency	10.5	5.4	0.8	4.7
Women's Rights and Minority Opinion Valuation	-3.6	-2.5	0.4	-0.6
Workmanship and technical Proficiency	1.2	2.6	3.2	2.3
Total	3.8	-0.1	1.8	1.7

Appendix K

Factory/Management Indicator Scoring

Table 1 Leadership and Governance Indicators *

	Arctec Inc.	Autotex	Exilar Egypt	Total
Training and HRD functions (108/Lead-hrd1)	1	2	2	2
Effected program protocols (420)	1	1	2	2
Training(421)	1	2	2	2
Post-training appraisal(422)	1	1	2	2
Program Exists (109/Lead-hrd2)	1	1	1	2
System Operationalized (110/Lead-hrd3)	2	2	2	2
System tools (111/Lead-hrd3)	1	2	2	2
Environment for learning and development				
Degree of support(115/Lead-env6/)	1	1	2	2
Number of justifications(116/Lead-env6/)	1	2	2	2
Number of tools (119/Lead-env8) (3+)=(2)	1	1	2	2
Effectiveness (121a/Lead-env9)	1	2	2	2
Tools (121/Lead-env9)	1	1	1	2
Number of tools (121a/Lead-env9) (D+=2) (A+2=2)	2	2	2	2
Appraisal for action (122/Lead-env10)	2	1	2	2
Total number of respondents who have tools for appraisal	1	2	2	2
Fostering Teamwork	1	2	2	2
Effective (124/Lead-env11)	1	2	2	2
Democracy in planning & decision-making	1	1	2	2
transparency and distributive justice (129/Lead-gov14)	1	2	2	2
Systemized/documented in factory's basic regulations (130/Lead-gov15)	1	1	2	2
Researcher's view (133/Lead-gov16)	1	2	1	2
budget segments for institutional development plan				
Exists (134/Lead-adfin17)	2	1	2	2
%of Total expenditure budget (135/Lead-adfin17) 5%+	2	1	1	2
System for fairly allocated responsibility and division of labor				
Modern (139/Lead-adfin19)	1	1	2	2
Promotion directives: (140/Lead-adfin19)	2	1	2	2
Total	31	37	46	50

Table 2 Resource Indicator (Physical and Human)*

	Arctec Inc.	Autotex	Exilar Egypt	Total
Selection/recruitment tools to overcome HR scarcity (417) (A+B)	1	1	1	2
Test Complexity(419)	1	2	2	2
Employs Training and SD systems				
HR development scheme (201/Phys-hrsd1)	1	2	2	2
Skill development scheme (202/Phys-hrsd1)	1	1	2	2
Provides external/foreign exposure				
How many/year (513) (5+)	2	1	2	2
Periodical span (514)	2	1	2	2
Training workers in Egypt (425)	2	1	1	2
Monitoring and evaluating of human resource allocative efficiency				
Tools (204/phys-hr-sd2)	2	1	2	2
Time span (205/phys-hr-sd2)	1	2	2	2
Owns modern equipment, machinery and tools necessary to operationalize development goals (206/Phys-hr-ph3)	2	1	2	2
Operation manuals at worker disposal, effectively in use				
Available for workers' consultation (208/Phys-hrph4)	1	1	2	2
Frequently used by workers (209/Phys-hrph4)	1	1	2	2
Workers observed to use them (210/Phys-hrph4)	1	1	2	2
Financial resources for goal achievement				
Abundant (215/Phys-hrph7)	2	1	2	2
Factory structure and layout efficiently and safely serves production functions (221/Phys-hrfac10)	1	2	2	2
Total	21	19	28	30

*Table 2 and 3 were later combined to form one summary measure of factory modernity

Table 3 Managerial Disposition Composite Summary Scoring

	Arctec Inc.	Autotex	Exilar Egypt	Total
Work environment supportive of learning and development				
Supports learning and development (401/WE-dev8) (AorB)	1	2	2	2
Compliance to rules and regulations (405/ WE-eth12)	1	2	2	2
Internalization of ethical work values (406/ WE-eth13) (AorB)	2	2	2	2
Workers' initiatives' contribution to production increase (407/MA-1)	1	1	2	2
Informing Workers ahead of time of changes in planning and in production flow				
Important (408/MA-2)	1	1	2	2
Reason (409/MA-2)	1	1	2	2
Attention to pay to workers' feelings (410/MA-3)	1	2	1	2
Use and frequency of time and motion controls by management (411/WCL-1) (no)	1	2	1	2
Frequency in months (1+year)	1	2	1	2
Worker contribution in formal production (412/WCL-2)	1	1	2	2
Clear and publicized vision and mission (102/MGMT_1)	2	2	2	2
Clearly stated for workers				
Exists(104/MGMT_1)	1	1	2	2
Place :(105/MGMT_1)	1	1	2	2
Includes development of its workforce as a principal ingredient				
Included (101/Mgmt-1,106/Mgmt-2)	2	2	2	2
Principal/secondary (107/Mgmt-2)	2	1	1	2
Total	19	23	26	30

Table 4 Work Force Quality

	Arctec Inc.	Autotex	Exilar Egypt	Max. score
Age (413/WCL-3) **(30+)**	2	1	1	2
Skill (414/WCL-3) Work Behavior Scale	9.0	9.3	9.8	10
Residence	1	1	2	2
Total	12	11.3	12.8	14

Table Supervisors' Caliber Scale Scoring

	Arctec Inc.	Autotex	Exilar Egypt	Total
Cultural Theme	61.0	66.0	62.0	63.0
Technical Theme	72.0	78.0	72.0	74.0
Social Theme	71.0	90.0	65.0	75.3
Total	68	78	66.3	70.8

Appendix L

Age Distribution

Table Age distribution

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Less than 30 years old	55.6	70.0	91.7	100.0	74.4	88.9	75.0	87.8
31 – 40 years old	44.4	20.0	8.3	0.0	25.6	11.1	25.0	9.8
40 years old or more	0.0	10.0	0.0	0.0	0.0	0.0	0.0	2.4
Number of workers	9	10	12	13	39	18	60	41

Appendix M

Regression and Correlations

Regression Model1 Cultural

[DataSet4] \\10.0.0.5\Measuring_the_variations_between_workers_in_spare-parts_factories\VMFS\Analysis\DataSet_MR.sav

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Ind_6, Ind_1, Ind_2, Ind_3[a]	.	Enter

a. Tolerance = .000 limits reached.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.727[a]	.528	.509	6.59028

a. Predictors: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4667.126	4	1166.782	26.865	.000[a]
	Residual	4169.448	96	43.432		
	Total	8836.574	100			

a. Predictors: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

b. Dependent Variable: Tab_Cul

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	25.725	6.356		4.048	.000
	Ind_1	5.215	.523	.714	9.971	.000
	Ind_2	.000	.003	-.022	-.296	.768
	Ind_3	.217	.116	.141	1.866	.065
	Ind_6	-.135	1.657	-.006	-.081	.935

a. Dependent Variable: Tab_Cul

Excluded Variables[b]

Model						Collinearity Statistics
		Beta In	t	Sig.	Partial Correlation	Tolerance
1	Ind_4	.[a]	.	.	.	.000
	Ind_5	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

b. Dependent Variable: Tab_Cul

Regression Model 2 Social

[DataSet4] \\10.0.0.5\Measuring_the_variations_between_workers_in_spare-parts_factories\VMFS\Analysis\DataSet_MR.sav

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Ind_6, Ind_1, Ind_2, Ind_3[a]	.	Enter

a. Tolerance = .000 limits reached.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.458[a]	.210	.177	9.93777

a. Predictors: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2520.093	4	630.023	6.379	.000[a]
	Residual	9480.897	96	98.759		
	Total	12000.990	100			

a. Predictors: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

b. Dependent Variable: Tab_Soc

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	

		B	Std. Error	Beta	t	Sig.
1	(Constant)	64.628	9.584		6.743	.000
	Ind_1	3.825	.789	.449	4.850	.000
	Ind_2	.001	.004	.022	.229	.819
	Ind_3	-.137	.176	-.076	-.780	.437
	Ind_6	-.419	2.499	-.017	-.168	.867

a. Dependent Variable: Tab_Soc

Excluded Variables[b]

Model						Collinearity Statistics
		Beta In	t	Sig.	Partial Correlation	Tolerance
1	Ind_4	.[a]	.	.	.	.000
	Ind_5	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

b. Dependent Variable: Tab_Soc

Regression Model 3 Technical

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Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Ind_6, Ind_1, Ind_2, Ind_3[a]	.	Enter

a. Tolerance = .000 limits reached.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.697[a]	.486	.465	7.53843

a. Predictors: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5156.679	4	1289.170	22.686	.000[a]
	Residual	5455.479	96	56.828		
	Total	10612.158	100			

a. Predictors: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

b. Dependent Variable: Tab_Tec

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	

		B	Std. Error	Beta	t	Sig.
1	(Constant)	32.326	7.270		4.446	.000
	Ind_1	5.433	.598	.678	9.081	.000
	Ind_2	.000	.003	-.019	-.254	.800
	Ind_3	.270	.133	.160	2.022	.046
	Ind_6	-.151	1.896	-.006	-.080	.937

a. Dependent Variable: Tab_Tec

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics: Tolerance
1	Ind_4	.[a]	.	.	.	.000
	Ind_5	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Ind_6, Ind_1, Ind_2, Ind_3

b. Dependent Variable: Tab_Tec

Correlations

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Correlations

		Tab_Cul	Tab_Tec	Tab_Soc	Ind_1	Ind_3
Tab_Cul	Pearson Correlation	1	.970**	.338**	.713**	.157
	Sig. (2-tailed)		.000	.001	.000	.117
	N	101	101	101	101	101
Tab_Tec	Pearson Correlation	.970**	1	.360**	.678**	.175
	Sig. (2-tailed)	.000		.000	.000	.080
	N	101	101	101	101	101
Tab_Soc	Pearson Correlation	.338**	.360**	1	.452**	-.058
	Sig. (2-tailed)	.001	.000		.000	.564
	N	101	101	101	101	101
Ind_1	Pearson Correlation	.713**	.678**	.452**	1	.022
	Sig. (2-tailed)	.000	.000	.000		.828
	N	101	101	101	101	101
Ind_3	Pearson Correlation	.157	.175	-.058	.022	1
	Sig. (2-tailed)	.117	.080	.564	.828	
	N	101	101	101	101	101

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix N

Scores of Indicator 1 and 3

(Personal and Family characteristics and General Managerial Dispositions)

Table Mean Binary Scores of Indicators 1

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Personal and family characteristics	3.78	3.50	4.25	2.92	3.67	3.67	3.80	3.39

Table Total Binary Scores of Indicator 1 & 3

	Arctec Inc.	Autotex	Exilar Egypt	Max. score
Personal and family characteristics	3.63	3.56	3.67	6
General Managerial disposition	31.0	37.0	46.0	50

Table Scales Scores of Indicators 1

	Arctec Inc.		Autotex		Exilar Egypt		Total	
	Old	New	Old	New	Old	New	Old	New
Personal and family characteristics	63.0	58.3	70.8	48.7	61.2	61.2	63.3	56.5

Table Total Scale Scores of Indicator 1 & 3

	Arctec Inc.	Autotex	Exilar Egypt
Personal and family characteristics	59.3	61.2	59.3
General Managerial disposition	62.0	74.0	92.0